American Psychiatric Association

167th Annual Meeting, New York, NY

# POSTER ABSTRACTS

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AMERICAN PSYCHIATRIC ASSOCIATION

167th Annual Meeting, New York, NY

# RESIDENT/MEDICAL STUDENT COMPETITION POSTER ABSTRACTS

**MAY 03, 2014**

**NO. 1**

**IMPACT ANALYSIS OF A RESIDENT-LED BEHAVIORAL PRIMARY CARE INTEGRATION PROJECT IN RURAL MISSOURI**

*Lead Author: Emaya Anbalagan, M.D.*
*Co-Author(s): Muskinni Salau, M.D., Sosunmolu Shoyinka, M.D.*

**SUMMARY:**

Introduction:

Over the past decade, Integrated/Collaborative care, which refers to the integration of Behavioral Health and Primary Care, has gained traction as a model of mental health care delivery. Based on the seminal IMPACT study by Unutzer et al, integrated care been shown to generate better clinical outcomes at lower cost to the system. It has been implemented with various modifications across the country, including at Cherokee Health Systems in Tennessee. However, there is still a lack of consensus on best practices for training psychiatrists to work in integrated systems. This project describes one such training model developed in a Federally Qualified health Center (FQHC) based in rural Missouri.

Objective:

1. To describe a resident-led pilot Integrated Care project in Mid-Missouri.
2. To assess the impact of the project on the care setting on access to behavioral health, cost avoidance, referral reduction, patient and provider satisfaction.

Model:

As part of community mental health training, a Psychiatry Resident (PR) is based in the Family Health Center in Columbia, MO, a FQHC, 4 hours a week. The psychiatry resident provides real time consultation to the primary care physicians and nurse practitioners (PCP). The 4 hour block is a blend of scheduled time for new evaluations and follow ups and built-in free time for 'curbsides'. The PR visits with the patient, consults with the PCP immediately after with recommendations and with the supervising psychiatrist as needed. It is loosely on the model at Cherokee Health Systems. Financial backing comes from a co-location grant from Missouri's Department of Mental Health.

Methods:

Data regarding number of patient's seen, gender, source of referrals, types of insurance is being collected on an ongoing basis. Questionnaires are used to assess patient satisfaction and provider satisfaction.

Results:

Preliminary data across 6 months from 2012 was analyzed. 68% of patients seen were "curbsides" or patients for whom PRs had been accessed immediately, almost 60% were female. More than 74% of patients underwent brief evaluations of around 15 minutes. Further analysis is ongoing.

Conclusion:

Mental health is largely underserved in the United States. The Integrated Health care model attempts to bridge this gap by decentralizing behavioral health care. It emphasizes patient centeredness with its easy accessibility, cost avoidance of ER visits, hospitalizations and reduced referral time. Although in its preliminary stages, our model has already proved popular among primary providers. From the perspective of the resident psychiatrists, the experience serves as an excellent learning opportunity both as a community initiative to provide a much needed service and to practice autonomy and engage in teamwork. Preliminary data suggests that this model has resulted in significant reduction in wait times for psychiatric evaluation, cost avoidance, patient, trainee and provider satisfaction

**NO. 2**

**BENZODIAZEPINES AND RETROGRADE AMNESIA**

*Lead Author: Muhammad A. Anees, M.D.*

**SUMMARY:**

Benzodiazepines enhance the effect of GABA resulting in their sedative, hypnotic, anxiolytic, anticonvulsant and muscle relaxant properties. At high doses, many short acting benzodiazepines have amnesic - dissociative actions. Anaesthetic practice is the only clinical context in which amnesia is a valued property of benzodiazepine drugs, since decreased recall considerably enhances patient tolerance and acceptance for procedures. Moreover, anterograde amnesia is well established with the use of benzodiazepines, but retrograde amnesia has not been conclusively demonstrated. A case has been reviewed where use of one dose of 5 mg intramuscular midazolam has caused significant retrograde amnesia in an otherwise cognitively intact patient.

**NO. 3**

**PRODROMAL SCHIZOPHRENIA: A REVIEW**

*Lead Author: Lacey Armstrong, M.D.*

**SUMMARY:**

The majority of patients with schizophrenia describe a variety of subacute symptoms in the months and years preceding psychosis. Studies have shown longer duration of untreated psychosis may lead to increased depression, anxiety, negative and positive symptoms, and overall poorer functioning. Studies have also shown that early intervention may decrease duration of psychosis and improve short term clinical outcomes. The following case presentation is an attempt to review the latest evidence based risk factors, clinical features, prognosis, and treatment options for prodromal schizophrenia.

**NO. 4**

**RELIABILITY AND VALIDITY OF THE KOREAN VERSION OF THE ROSENBERG SELF-ESTEEM SCALE**

*Lead Author: Ha Na Bae, M.D.*
*Co-Author(s): Kyeong-Sook Choi, MD., PhD*

**SUMMARY:**

Objectives: The purpose of the present study was to assess the reliability and validity of the Korean version of the Rosenberg

Self-Esteem Scale (K-RSES).
Methods: The original English version of the RSES was translated into Korean, and the Korean version was confirmed via a back-translation process. Data were collected from two different groups, 392 undergraduates and 30 office workers, yielding a total sample of 422 adults. Participants completed the Korean version of the RSES, the State-Trait Anxiety Inventory (STAI), the Beck Depression Scale (BDI), and the Conner-Davidson Resilience Scale (CD-RISC). Two versions of the eight-item K-RSES were used: one included the original meaning of the English version of one item (i.e., item 8-1), and the other included a version of that item that was adapted to reflect cultural differences (i.e., item 8-2). The reliabilities of both versions and the validity of version 8-2 were tested.
Results: The reliability of the version excluding item 8-1 was higher($\alpha$=0.82) than was that of the version that included it($\alpha$=0.71). However, the Cronbach's alpha coefficients were identical for the version with and without item 8-2 ($\alpha$=0.90). We found negative correlations between the final version of the K-RSES with item 8-2 and the other scales: STAI-S, r = -0.62; STAI-T, r = -0.83; and BDI, r = -0.71. However, we found a positive relationship between the K-RSES with item 8-2 and the CD-RISC (r = 0.80, p < 0.001). According to tests for construct validity, the K-RSES consists of a single factor.
Conclusion: The results showed that the reliability of the K-RSES was higher when item 8-2 was included. We also found that this version of the K-RSES consists of a single factor, which is consistent with previous studies. Thus, the Korean version of the K-RSES can contribute to research on self-esteem.

**NO. 5**

**THE CHEQUE EFFECT: THE TEMPORAL RELATIONSHIP OF GOVERNMENT DISABILITY INCOME PAYMENTS AND UTILIZATION OF SUBSTANCE WITHDRAWAL SERVICES**

*Lead Author: Paul V. Benassi, M.D.*
*Co-Author(s): Paul Kurdyak, M.D., PhD., Marco Sancos, MSc.*

**SUMMARY:**

Objective:
The 'cheque effect' refers to the temporal link between disability payments and substance use. Previous studies have shown increased emergency healthcare utilization, morbidity, and mortality in association with the distribution of monthly disability cheques. In Ontario, the Ministry of Human Resources issues disability cheques to eligible recipients monthly on the last work day of each month. The objective of this analysis was to determine if the disbursement of disability payments was temporally related to the referral volumes of provincial Medical Withdrawal Service Centres (MWSC), which provide substance detox programs.
Methods:
Daily admission data was collected from Ontario's MWSC spanning from 2006 to 2011. Time Series Intervention Analysis was used to evaluate the impact of monthly disability income payments on temporal utilization patterns of the MWSC.
Results:
The MWSC has on average 104.03 admissions per day. Analysis showed that on the date of cheque disbursement the MWSC experienced a decrease of 6 visits (SE 1.65, p = 0.0003, CI [2.67; 9.28]) in their daily volumes, equivalent to a 6% drop in admission. On the second day post-payment, daily visit volumes increased by 3 from baseline (SE .87, p = 0.0008, CI [1.11; 4.62]), equivalent to a 3% increase in admissions. After day two, admission changes were non-significant and returned to baseline.
Conclusion:
The distribution of disability cheques was associated with monthly temporal patterns of addiction services utilization, specifically referrals to MWSC. Our study confirmed previous findings that there is a decrease in addiction service utilization on the day of cheque release, followed by an increase of referrals the preceding day(s) and then returns to baseline.

**NO. 6**

**USING MENTAL HEALTH OUTREACH TEAMS IN THE EMERGENCY DEPARTMENT TO IMPROVE ENGAGEMENT IN TREATMENT**

*Lead Author: Jason Boudreaux, M.D.*
*Co-Author(s): Kathleen Crapanzano, M.D., Vince Dodge, M.D., Thomas Jeider, M.D., Glenn Jones, Ph.D., Jane Asofsky M.D., Ph.D.*

**SUMMARY:**

Introduction/Hypothesis: Across the country, emergency departments (EDs) are continuing to serve increasing numbers of psychiatric patients. Large numbers of psychiatric patients in the ED contribute to overcrowding, boarding of psychiatric patients, increased waiting times, and increased demand on ED staff. All of these factors can lead to lower quality of care for psychiatric patients in crisis. One strategy to address ED overcrowding and psychiatric readmissions is to establish ancillary services inside of the ED such as community based mobile outreach teams to individually connect with psychiatric patients in the ED and educate them about available outpatient services. Our objective was to evaluate the effect of one community behavioral health program's engagement with patients in the ED as a component of a continuum of care for people in a behavioral health crisis.
Methods: This retrospective study analyzed data collected by a local mental health agency, working in conjunction with an Emergency Department that included a dedicated psychiatric observation unit. At baseline, all adult patients who were eligible to be discharged from the observation unit were only given oral instructions and paperwork for follow up care. The mental health agency then established a mobile outreach team that physically met with and engaged patients before discharge. To determine whether this intervention was meaningful, the data were looked at in two ways. Initial outpatient follow-up rates were compared between those patients who received only instructions prior to discharge (baseline phase) and those patients who also received contact with the mobile outreach team (outreach phase). Secondly, within the outreach phase, those who received contact from the mobile outreach team were compared to those who did not.
Results: In both analytic approaches, a significant increase in follow up appointment attendance was noted. Compared to the baseline phase, patients in the outreach phase were more likely to attend their initial follow up appointment (OR = 1.43, 95%CI 1.05 to 1.95, p<0.02). Furthermore, during the outreach phase, those patients who received the active intervention were more likely to attend their follow up appointment as well (OR= 5.2, 95% CI 2.7 to 9.8, p <.0001).

Conclusions/Discussion: The benefits of avoiding return emergency department visits and/or hospitalization are numerous to both the system and the individual in crisis. Our study suggests that the use of mental health outreach teams in the ED can result in an increase in initial follow up appointment attendance by people who have experienced a psychiatric crisis. Using a mental health outreach team in the emergency department is an option for community hospitals and mental health providers to consider providing in partnership.

**NO. 7**

**A QUALITATIVE ANALYSIS OF MENTAL HEALTH COLLABORATIVE CARE AT A COMMUNITY HOSPITAL SITE: EXPERIENCES OF FAMILY PHYSICIANS AND RESIDENTS**

*Lead Author: Kathleen Broad, M.D.*
*Co-Author(s): Paul Benassi, M.D.,Jared Peck, M.D., Juveria Zaheer, M.D.*

**SUMMARY:**

Objective:
Family physicians play an important role in assessing, treating, and caring for patients with mental illness. Collaborative care models aim to promote positive interaction between health professionals, with each bringing their own unique skills and knowledge, to assist patients and families with health decisions. Complex healthcare care models, such as collaborative care, require one to understand how a program is implemented and the internal dynamics under which it operates. Implementation and process evaluations entail elucidating feedback and experiences from a program's key stakeholders, such as family physician. In a review of the literature four major themes have been identified related to the implementation of collaborative-care programs. These include access to care, communication, understanding of responsibilities, and education. For our study we plan to evaluate the implementation of a mental health collaborative care model at a community hospital through examining the experiences of family medicine physicians and residents who refer to the program.
Methods:
The study will entail use of semi-structured interviews and focus groups sampling family medicine residents and staff physicians connected to a community teaching hospital with a collaborative care clinic. Interview questions will explore the implementation of the program and themes identified from the collaborative care literature. A qualitative thematic analysis approach will be used to identify key concepts and themes in the data.
Results:
This study is currently in the implementation phase. We hypothesize that the themes elicited from our study will map onto those identified in the current collaborative care literature. We are interested to evaluate which themes are more prominent as strengths or weakness for our specific program site.
Conclusion:
Qualitative research methods focusing on program implementation and process evaluation are vital to understanding complex healthcare programs. They can help identify if a program is being implemented according to its design and how its users engage with it. Themes that are identified in our qualitative analysis may correlate with findings in the literature relating to collaborative care such as access to care, communication, understanding of responsibilities, and education. The results can inform quality improvement and future implementation of collaborative care models, including our community hospital site.

**NO. 8**

**SEE NO EVIL: EYE CARE IN THE CHRONICALLY MENTALLY ILL**

*Lead Author: Deborah M. Brooks, A.B., M.D.*
*Co-Author(s): Ann Hackman, MD, Xian Zhang, M.D.,Ph.D.*

**SUMMARY:**

A 45-year-old woman is a long-standing patient with the Program of Assertive Community Treatment (PACT) team in Maryland. She has been struggling with paranoid schizophrenia for many years and she has auditory hallucinations that command her to harm herself; after one such command, she stuck a needle in her right eye and thus lost vision in that eye. To add insult to (literal) injury, she is now in danger of losing vision in her remaining eye because her negative symptoms impede her ability to manage her diabetes.
Unfortunately, there are many patients like her.

Even with the best of intentions there has been longstanding concern about the quality of medical care for people with severe and chronic psychiatric illnesses; much evidence has demonstrated that this population has greater morbidity and mortality than that of the general population. Although there is an overall paucity of data on visual problems in people with severe mental illness, there are several studies which have reported high rates of visual impairment. Co-occurring eye problems contribute to a higher level of functional and occupational disability and poorer quality of life in this population. Impaired eyesight poses a major obstacle to recovery and integration into the community. There is a pressing need to increase the awareness of mental health providers regarding ocular problems in people with severe and chronic mental illnesses.
Multiple factors are involved in the risk of increased eye problems in this population. These include but are not limited to the following: 1) the loss of initiative and the cognitive limitations associated with deficit symptoms in illnesses such as schizophrenia; 2) self-inflicted injuries and a preference for bright light (which may result from psychosis), 3) unhealthy lifestyle choices including smoking, poor diet and lack of exercise 4) direct and indirect damages to the eye caused by antipsychotic and other medications.
Given that a majority of eye problems can be treated more readily at an early stage, visual acuity should be regularly assessed during office and community visits.
This poster aims to provide a brief review of the literature and some clinical examples of people with serious mental illness and eye problems. Some screening tools for visual problems will be introduced. For clinical consideration, several resources and methods of improvement will also be provided.

**NO. 9**

**PSYCHOSIS OF EPILEPSY VERSUS SCHIZOPHRENIA**

*Lead Author: Muhammad H. Burhanullah, M.D.*
*Co-Author(s): Muhammad Waseem khan, M.D.*
*Paul C. Hulsberg, B.S.*

**SUMMARY:**
Background: Presenting in up to 9% of patients with epilepsy, psychosis can be a severe complication of an already debilitating disorder. Although the condition presents similarly to schizophrenia, psychosis of epilepsy (POE) carries a better prognosis due to its lack of negative symptoms. In the literature, there is some agreement that POE arises mainly from the temporal lobe and is associated with an earlier onset of epilepsy as well as bitemporal seizure foci. However, the etiology and pathogenesis of this devastating complication remains a topic of debate among clinicians.
Researchers have been examining the relationship between epilepsy and psychosis from as early as 1825; however, until the advent of modern imaging techniques, their evidence was mainly dependent on postmortem examinations. For over 25 years, investigators have utilized magnetic resonance imaging (MRI) to study the structural changes of both POE and schizophrenia. Through the use of objective methodology such as T1 relaxation times and voxel-based morphometry (VBM), researchers are able to to observe and report quantitative changes in imaging that otherwise would be left to the subjective judgment of the examiner. By reviewing the current literature on MRI-based structural changes in POE and comparing them to those of schizophrenia, we hope to further establish the distinction between the two conditions.
Methods: A review of the current literature was conducted, utilizing the search terms: psychosis of epilepsy, schizophrenia, magnetic resonance imaging, structural changes, and temporal lobe epilepsy. Fourteen articles were identified and reviewed. The researchers compiled the evidence and synthesized results based on the findings in the literature.
Results: Although most sources agree that schizophrenia is largely characterized by a loss of left temporal lobe volume particularly in the region of the amygdala and hippocampus, studies focused on these structures in POE have shown preservation of hippocampal volumes, as well as a significant (16-18%) increase in amygdala volume bilaterally. There is limited evidence to suggest that POE invokes similar cortical grey matter abnormalities to those shown in schizophrenia, and although some researchers have attempted to elicit structural changes in the corpus callosum as a result of POE, there is no evidence to suggest significant changes in the region.
Conclusion: While schizophrenia produces marked volume loss in cortical structures including the hippocampus and amygdala, MRI examination of patients with POE shows a relative preservation of hippocampal volumes with a significant bilateral enlargement of the amygdala. The absence of cortical grey matter abnormalities as well as preservation of medial temporal lobe structures when compared to epileptic patients without psychosis suggests that POE is a separate nosologic entity from schizophrenia and is not simply the result of comorbid conditions.

**NO. 10**
**USING GROUP THERAPY FOR COMMUNITY BUILDING AS A PSYCHIATRY RESIDENT**
*Lead Author: Marc Campbell, D.O., Ph.D.*

**SUMMARY:**
This poster will attempt to describe advantages for a psychiatry resident of participating in a monthly group of psychotherapists from Psychology for Social Responsibility, to find ways to make our mental health and group process expertise central to how we engage with our professional and local communities.
We support one another's community building capacity through active listening and engaging in immediate process with one another.
While being trained within academic, military and corporate cultures, we examine the frame we are trained in, and how this relates to self censorship, provider burnout and the needs of our local communities.
We share our reframing, our interventions, listening and supporting each other's successes and failures.
As intimacy increases within the group, we offer each other critical feedback and engage personally.

**NO. 11**
**ALCOHOL SELF-HELP GROUPS AND ALCOHOL EDUCATION IN SAINT VINCENT AND THE GRENADINES**
*Lead Author: Divya K. Chhabra, B.A.*

**SUMMARY:**
Introduction: In 2004, there were 4.1 deaths from alcohol use disorders per 100,000 people in Saint Vincent and the Grenadines (SVG) one of the highest rates in the world. There are no medical resources currently for patients with alcoholism. Thus, work was done to pilot self-help groups modeled on Alcoholic Anonymous (AA), in SVG in summer 2012. A followup team returned to SVG in summer 2013 to assess the success of those groups and to pilot more. This study looks at the piloted self-help groups in SVG and what specific factors were associated with their success. Methods: Research entailed several focus groups in the communities including Barrouallie, Kingstown, Georgetown, Trumaca, Bequai, and Campden Park regarding community issues with alcoholism and local views about starting self-help groups. A convenience sample of local Kingstown inhabitants was also surveyed about their community's experience with alcohol and their knowledge of its effects. Finally, current and former selfhelp group members in Barrouallie, the only surviving group from 2012, were surveyed on their experiences. Five new self-help groups were piloted by the end of the 2013 summer. Discussion: The only remaining self-help group after the 2012 pilot program was Barrouallie. This group had 9 participants attending since August 2013. Eight of them have stopped drinking completely, and the 9th member has been sober since July 2013. Eight members agreed that the group was "very helpful," and five of them joined the group through word of mouth. One participant noticed the "seriousness" of the group he saw at the park, so he joined. This openness was not apparent in the failed groups from 2012. When asked what could make their group more successful, about 2/3 of the subjects stated "encouraging more people to join the group." Of the former participants, 100% of them answered "yes" to whether the group helped them overcome their drinking problem. The former subjects stopped coming due to pregnancy or schedule conflicts. The current participants felt that forgoing anonymity would help to disseminate the group elsewhere in SVG. The group was then aired on local television to spread their message. Lastly, in the convenience sample from Kingstown, 75% of subjects claimed alcoholism is "not a disease," and the majority weren't aware of its organ effects. Discussion: Unlike the AA model, the group that suc-

ceeded in SVG from the 2012 explicitly shed its anonymity. This philosophy was used for establishing five new groups whose viability is currently being assessed. The lack of alcohol education was apparent when the majority of locals surveyed didn't realize that it is a disease or how it affects the organs. The team initiated an educational campaign to promote prevention. The open culture of SVG allowed a unique group design to attain success. Cultural competency must be taken into consideration when when implementing self-help groups, as alcoholism is an overlooked global issue.

**NO. 12**

**A SUCCESSFUL CASE OF CLOZAPINE FOR TREATMENT-RESISTANT SCHIZOPHRENIA: A CASE REPORT**

*Lead Author: Alicia L. Cowdrey, M.D.*
*Co-Author(s): Esad Boskailo, M.D.,Gilbert Ramos*

**SUMMARY:**

Introduction: Clozapine is Psychiatry's gold standard for Treatment Resistant Schizophrenia (TRS). It has both positive and negative prescribing aspects and requires careful administration and monitoring. The anti-suicidal and anti-aggressive properties associated with clozapine make it a desirable treatment for certain subsets of schizophrenia. We report on a difficult case of TRS complicated by significant body mutilation, successfully treated with clozapine. We hope to demonstrate how careful clozapine dosing with vigilant care team coordination can improve both mental and physical health of those afflicted with TRS.

Case Presentation: A 54-year-old male with loose and disorganized thinking, very bizarre delusions, auditory hallucinations, and a history of treatment resistant schizophrenia, was admitted to the involuntary unit. In the previous year the patient had been on court-ordered treatment with outpatient services and forced medications but had been lost to follow-up by his outpatient team. His decompensation and resultant religious delusions led him to inflict hundreds of burns with cigarettes and lighters all over his body, which were infected upon admission. He had been eating trash and living behind dumpsters due to religious delusions and command hallucinations. This patient suffered a TBI ten years prior, after similar symptoms caused him to throw himself in front of a train. He also suffered amputations to several left toes and partial right foot at that time.

During inpatient, a CT demonstrated a history of right temporal craniotomy with ongoing encephalomalacia of right temporal lobe. A staffing with the outpatient team at the time of admission revealed the patient had done well in the past on clozapine and when living in a 24-hour residential home. Although the entire team deemed guardianship a necessity, the court unfortunately did not find him gravely disabled. The team agreed that guardianship should be pursued outpatient. He refused medications prior to court and was placed on forced medications when court ordered treatment was in place.

He continued to refuse oral medications and initially required haloperidol injections. He continued to be floridly psychotic. He began accepting clozapine, only to cheek and hide the pills. A switch to the disintegrating tablet facilitated compliance. It took several months for his symptoms to stabilize. His clozapine dose was 100mg qam & 400mg qhs, with a level of 382 upon discharge. His skin had healed and he was no longer compelled to hurt himself from his religious delusions or command hallucinations. The agreement was made with outpatient team that the only appropriate step down placement would be a 24 hour residential, as this patient was at high risk of decompensation and possible risk of serious complications if he went for more than three days without medication or did not attend to weekly blood draws.

**NO. 13**

**MEDICATION ADHERENCE AMONG PSYCHIATRIC OUTPATIENTS AND PHYSICIAN AWARENESS OF ADHERENCE**

*Lead Author: Cesar Cruz, M.D.*
*Co-Author(s): Isabel Lagomasino MD, MSHS*

**SUMMARY:**

Objective: The authors' goal was to inform and improve clinical management by increasing physician awareness and assessment of medication non-adherence.
Methods: Developed a simple "yes or no" anonymous questionnaire without any identifiers for the patients or that linked the patients with their respective physicians. Physicians were not made aware of the purpose of the study or the content of the questionnaire. Sampled LAC-USC outpatient psychiatric population for two weeks.
Results: 55/344 (15.7%) patients completed the questionnaire. 92% of the patients were asked about adherence. 26% forgot to take their medication while 18.5 % cut back or altered medications without their physicians' knowledge. Overall, 1/54 (1.8%) patients had an alteration in medication management without being asked about med adherence
Conclusion: LAC-USC Psychiatric Residents performed above national rates when addressing medication adherence. LAC-USC psychiatric residents are at an advantage compared to their community counterparts when it comes to length of appointments, allowing greater time for assessment as well as for establishing therapeutic alliances, which have been found to promote adherences (9). This may have resulted in high reports of adherence and physician awareness. Further investigation is warranted to determine whether length of follow up appointments impact the therapeutic alliance, medication adherence, and physician awareness of adherence.

**NO. 14**

**SCREENING FOR DEPRESSION IN PATIENTS WITH TRAUMATIC OR ACQUIRED BRAIN INJURY: THE CHALLENGE OF FINDING APPROPRIATE AND EVIDENCE-BASED SCREENING TOOLS**

*Lead Author: Adriana de Julio, M.D., M.Sc.*
*Co-Author(s): Bernadette Stevenson, M.D., Ph.D.*

**SUMMARY:**

INTRODUCTION: There is extensive data on the neuropsychiatric sequelae of Traumatic Brain Injury (TBI) and Acquired Brain Injury (ABI). Major depression is undertreated in both TBI and ABI. Early screening for insomnia, depression, and anxiety facilitates early diagnosis and treatment, and reduces the mortality and morbidity in patients with TBI or ABI.
HYPOTHESIS: Although clinicians may be aware of the need to screen for depression in persons with TBI or ABI there is not clear evidence for which screening tool to use.
METHODS: In order to understand and analyze tools to screen and monitor depression in those with brain injury, a literature review was undertaken. Relevant articles published between

2009 and 2013 were identified by searching PubMED using the following MeSH search terms: traumatic brain injury, acquired brain injury, and head injury. Each of these terms was cross-referenced with the following MeSH terms: psychosis, depression, rehabilitation, screening, and psychiatric status rating scales. The results were limited to human studies and English language peer reviewed articles.
RESULTS 106 articles were identified and 64 articles met the final criteria. Twenty-seven different screening tools were used in the 64 studies with the most common being: Beck's Depression Inventory-II (BDI-II) (25%), Structured Clinical Interview Diagnostic (SCID-IV) (17%), Personal Health Questionnaire (PHQ) (14%), Hospital Anxiety and Depression Scale (HADS) (10.9%), and Hamilton Depression Scale (HAM-D) (9%). Fifty-three studies used multiple screening tools, which were usually a combination of BDI-II and a questionnaire completed independently by a patient.
CONCLUSIONS: Standardized methods and timelines for screening are still in a state of flux and vary between hospitals, government agencies, and academic environments. Given that psychiatrists and neurologists have no definitive neuroanatomical markers to predict the development of major depression and thereby increasing disability, the standardization of depression screening tools could improve the outcome of recovery from TBI and ABI.

**NO. 15**

**OSITA: "OUTREACH, SCREENING, AND INTERVENTION FOR TRAUMA" FOR INTERNALLY DISPLACED WOMEN IN BOGOTA, COLOMBIA**

Lead Author: Zelde Espinel, M.A., M.D., M.P.H.
*Co-Author(s): James M. Shultz, M.S., Ph.D., Ricardo Araya, M.D., Ph.D., Luis Jorge Hernandez Flores, M.D., Ph.D., Angela Milena Gomez Ceballos, M.S., Helena Verdeli, Ph.D., Yuval Neria, Ph.D.*

**SUMMARY:**

Background. Colombia occupies a unique niche within the global patterns of conflict-associated internal displacement (persons displaced from home communities due to violence and human rights violations while remaining within their countries of origin). Colombia has the largest population of internally displaced persons (IDPs) of any nation in the world, estimated at 5.7 million in 2013 (20% of 29 million IDPs worldwide, 96% of IDPs in the Western Hemisphere). 70% of Bogota IDPs are women and children. Within the context of Colombia's armed insurgency, IDPs have been exposed to violence, displaced from their rural homes, and dispossessed of their property. Experiencing multiple losses, IDPs are forced to live marginally in urban settings. Once relocated, IDPs face the stressors of physical and economic survival in unfamiliar places and vulnerable circumstances, thus elevating risks for common mental disorders (CMDs - anxiety, depression, and PTSD).
Methods. An international team is piloting the OSITA (Outreach, Screening, and Intervention for TraumA for Internally Displaced Women) intervention in Bogota. OSITA combines 1) outreach and screening for CMDs for IDP women to increase recognition of these conditions; 2) provision of evidence-based stepped-care mental health interventions in household, primary care, and specialty settings to increase access to care; and 3) vocational outreach/case management to access employment opportunities including OSITA-branded micro-enterprises as part of a job creation initiative.
OSITA uses a 3-stage stepped-care model of mental health services. Step 1: OSITA staff will make home visits to screen for CMDs (using tablet-based technology), provide psychoeducation, and refer the more severe cases. Step 2: Primary care clinicians will assess, educate, and treat women IDPs who screen positive for CMDs and are referred by the outreach teams. Step 3: Women IDPs with severe CMDs will be referred to psychiatrist-guided, multiple-session outpatient evidence-based treatment.
Results. OSITA addresses four challenges: 1) integrating screening and services from the community to tertiary care; 2) developing mobile applications to support access and the delivery of evidence-based treatments; 3) providing effective community-based care; and 4) developing treatments to be delivered by non-specialists (task-shifting) but with appropriate training, support, and supervision. The formative, qualitative phase results based on focus groups to be conducted with women IDPs, community leaders, and health care providers during Spring 2014 will be presented in the poster session.
Conclusion. OSITA is designed to provide sustainable, technology-driven, evidence-based mental health screening and intervention for women IDPs in Bogota, the major receiving site for the world's largest IDP population. OSITA is an innovative program aimed at improving the mental health and socio-economic condition primarily for vulnerable women IDPs.

**NO. 16**

**CATAMENIAL PSYCHOSIS: A CASE REPORT**

*Lead Author: Myra D. Fernando, D.O.*
*Co-Author(s): Kathleen A. Crapanzano, M.D., Joseph A. Grizzaffi, M.D., Glenn N. Jones, Ph.D., MP*

**SUMMARY:**

INTRODUCTION: Menstrual psychosis was first described in the 19th century and several variants, depending on the timing of the onset of symptoms has been described. Catamenial psychosis is a type of menstrual psychosis with the onset of symptoms coincident with the onset of menstruation. The clinical presentation can be very similar to those of a patient with schizophrenia or bipolar disorder. However, unlike most psychotic disorders, a woman can return to her baseline level of function in between menses, and her symptoms are generally ineffectively controlled with antipsychotics alone.
CASE REPORT: Ms. C, a 14 year old female presented with personality changes and deterioration in school performance and sleep patterns. Over the next 9 months, the patient had periods of remission and relapse. Symptoms during relapse included incontinence, delusional beliefs, inappropriate affect, recurrent insomnia, and destructive behavior at home. Her comprehensive medical workup, including a complete neurological workup, was negative. Treatment with antidepressants and antipsychotics was not effective in preventing recurrent episodes.
The family compiled extensive documentation including calendars and video recordings to demonstrate the patient's behavior was linked to the onset of menses during each episode. Monthly Leuprolide acetate injections as well as daily birth control pills were prescribed. Since the initiation of hormone therapy, she had an incident of breakthrough symptoms once

after trying to switch her oral contraceptives and twice, coincident with episodes of break-through bleeding. Now three years after the initial onset of psychotic symptoms and disorganized behavior, the family reports that Ms. C has not had another full episode of these symptoms since the suppression of her menses and that she is "back to normal."
DISCUSSION: Reports of catemenial psychosis in the literature are relatively rare, numbering less than two thousand. Severe symptoms can present similarly to psychotic disorders such as schizophrenia and bipolar disorder, while milder symptoms can appear to present as premenstrual dysphoric disorder. The key components to the diagnosis of catamenial psychosis lie in the chronology and severity of symptoms.
Unlike more common psychotic disorders, antipsychotics do not result in a resolution of symptoms. Treatment is primarily the suppression of menses through gonadotropin releasing hormone agonists and birth control pills. SSRI's and atypical antipsychotics have been suggested as adjuvant therapies.
Implications of this case include the possible inclusion of a hormonal etiology for psychotic disturbance in adolescent women as part of the differential diagnosis. Also, future research could explore the role of menses suppression as a treatment approach for treatment resistant psychosis in young women.

**NO. 17**
**MENTAL HEALTH REFERRALS FROM PRIMARY CARE: DOES SHARED MENTAL HEALTH CARE MAKE A DIFFERENCE?**
*Lead Author: Graham Gaylord, B.Sc., M.H.A.*
*Co-Author(s): S. Kathleen, Baily, M.A., John, Haggarty, M.D.*

**SUMMARY:**
Introduction: Primary care providers frequently make referrals to outpatient community mental health (MH) services for common mental disorders (CMD), psychosocial problems, and serious mental illness (SMI). Shared mental health care (SMHC) models differ from traditional outpatient MH services in that physicians refer to a co-located MH service where patients receive treatment in a less stigmatized environment. This study examined whether outpatient MH referrals from five primary care sites differed between sites with and without SMHC.
Methods: Chart reviews were conducted to examine referrals (N=4600) from five primary clinics to five outpatient community MH services between January 2001 and June 2004. Referrals (N=2050) from two demographically similar clinics (one with SMHC, one without) were also compared.
Results: Patients referred to SMHC and non-SMHC did not differ in sex or age. Clinics with SMHC made significantly more MH referrals overall, accounting for 40.5% of all referrals. Referrals for CMDs (Odds ratio: depression=3.38; anxiety=2.95, p<.001), psychosocial problems (OR=6.07, p<.001), and SMI (psychotic symptoms OR=1.59, p=.022) were significantly more likely to be referred to SMHC than other MH services. When one clinic with SMHC was compared to a similar clinic without SMHC, referral patterns for CMD and SMI differed significantly between the two clinics (X2 = 47.192, df = 2, p<.001). The clinic with SMHC referred 2.58, 5.15 and 1.83 times more patients for depression, anxiety, and SMI, respectfully. Referrals for depression to non-SMHC were 1.45 times more likely from the non-SMHC clinic (t =-3.53,df=531.85, p<.001).
Conclusion: Access to SMHC appears to increase MH referrals from primary care, usually for SMHC services. SMHC appears to be acceptable to primary care providers for treatment of CMD and SMI, and more accessible than traditional community based MH services. The SMHC model appears to enhance the MH referral filter at the primary care level by increasing access to care while decreasing referral rates to traditional MH services.

**NO. 18**
**EXPANDING THE AWARENESS OF AVAILABLE RESOURCES IN THE COMMUNITY**
*Lead Author: Gregory Hestla*

SUMMARY:
Many patients present to the ER seeking aid for psychiatric problems that could be better handled with existing and available resources already present in the community. Patients come to the ER because they know they will be heard, and that they will be entered back into the support systems needed to manage their care. This pattern of behavior leads to an overwhelmed ER, and often leads to patients exaggerating their symptoms in an attempt to ensure they get seen, and that they can get the medications, placement, and services they need. They do not have any continuity of care, and this leads to conflicting medications and difficulty with followup and other practical problems. This is sub-optimal for both medical providers and patients. Increasing the knowledge of available outpatient and supportive care in the community could help reduce this burden to patients and providers.

**NO. 19**
**IDIOSYNCRATIC PRESENTATION OF NEUROLEPTIC MALIGNANT SYNDROME**
*Lead Author: Amer Ibrahim, M.D.*

**SUMMARY:**
Neuroleptic Malignant Syndrome (NMS) is a life threatening neurologic emergency associated with the use of neuroleptic agents. It is characterized by a distinctive clinical syndrome of mental status change, rigidity, fever and dysautonomia. Symptoms usually develop during the first two weeks of neuroleptic treatment and almost always within first 30 days. We report a very interesting case of NMS that developed years after being on the same anti-psychotic (Olanzapine) and on the same dose.
The poster highlights that absence of recent medications changes does not preclude the diagnosis of NMS. This presents an important diagnostic consideration as prompt recognition of NMS is the first and most vital step in the management.

**NO. 20**
**A RESIDENT'S GUIDE TO CREATING A TELEPSYCHIATRY PROGRAM FOR THE HEARING IMPAIRED IN RURAL POPULATIONS**
*Lead Author: Suni N. Jani, M.D., M.P.H.; Co-Author(s): Sheena Patel, M.D.; Teresa Crowe, Ph.D; Sushma Jani, M.D.; Niranjan Jani, M.D.*

**SUMMARY:**
Telepsychiatry has been recently approved for some Medicaid and state-funded services to people who have mental health, developmental disabilities as well as substances abuse needs or difficulties. It is a well established and well studied method of

delivering behavioral health services to individuals who do not have ready local access to the expertise required to meet their needs, but its implications for special populations such as the hearing impaired has not been extensively studied. Residency provides a unique opportunity for exposure and opportunities for exposure to alternative health care delivery systems. Community Behavioral Health, a community mental health center in the Eastern Shore of Maryland, has collaborated with residents as well as the Core Service Agency to obtain telepsychiatry equipment for the hearing impaired with the assistance of an HRSA grant from Gallaudet University. This innovative equipment utilizes the assistance of a social worker who is culturally competent in American Sign language. This poster will explain the role of a resident in obtaining, creating, and managing logistical necessities to allow effective delivery of mental health services to the hearing impaired in rural regions.

**NO. 21**

**TRAIT ANXIETY PREDICTS RISK FOR DECREASED MEDICATION ADHERENCE IN PATIENTS WITH CHRONIC MEDICAL ILLNESS**

*Lead Author: Jyothsna Karlapalem, M.B.B.S.*
*Co-Author(s): Yvette Fuchter, MA, Nisha Ver Halen, Ph.D, Eri Kutoba, MA, Tzvi Furer, M.D., Varsha Narasimhan, M.D., Subodh Saggi, M.D., Daniel Cukor, Ph.D.*

**SUMMARY:**
Introduction: Non-adherence to prescribed medication is a major issue in all chronically ill patient groups. Predictors of adherence behaviors are multifaceted and include demands on patient's time, resources, and adverse effects of medications and severity of illness. However, an individual patient's beliefs about medication, current levels of anxiety and depression may also play a strong role in understanding medication taking behavior. The current study aims to explore the association between anxiety, depression and beliefs about medication with adherence in patients with end stage renal disease (ESRD), a progressive and demanding chronic medical illness.
Hypothesis: Increased levels of depression and anxiety will be associated with decreased medication adherence longitudinally in patients with chronic medical problems.
Methods: This study was conducted in patients with ESRD on hemodialysis at an urban inner-city hospital. The sample was predominantly African American and had multiple comorbid medical conditions including Diabetes Mellitus and Hypertension. Adherence to prescribed medications is the one of the keys for survival and decreased morbidity in this population. As part of a larger study, 57 patients with ESRD on hemodialysis completed several psychological measures including the State-Trait Anxiety Inventory, Beck Anxiety Inventory, Beck Depression Inventory, Belief about Medications Questionnaire (BMQ) and the Medication Adherence Rating Scale (MARS), a self-report measure of adherence. These measures were administered again after six months (n=50).
Results: At initial assessment, trait anxiety was significantly associated with elevated (BDI>15) depression (r =.51), beliefs about harmfulness of medications (r= .38) and specific concerns about medication (r = .32). Trait anxiety scores were associated with continued clinical depression at six months follow up (r = .51) and were also associated with worse adherence scores on MARS (r = -.47) Neither measure of acute anxiety symptoms, the State Anxiety or BAI, were found to have statistically significant association with medication adherence or depression scores at initial assessment or follow up.
Discussion: Patients with higher levels of trait anxiety are more likely to have elevated depression, more concerns about the safety of their medications, believe that medications are harmful, and ultimately have decreased adherence to medication over time. This pattern of associations appears to be specific to trait anxiety, suggesting that an anxious style, more than acute anxiety, may be associated with negative outcomes. While this study is correlational and directionality cannot be predicted, assessment of trait anxiety may be helpful in the identification of patients at particular risk for decreased adherence in the long term and would enable us to provide focused intervention to patients at greater risk.

**NO. 22**

**MANIA AT HOME: IMPACT OF THE INTERNET**

*Lead Author: Naga Kothapalli, M.D.*
*Co-Author(s): Pankaj Lamba, MD, Priya Kumar, MD and Nabila Farooq, MD*

**SUMMARY:**
Introduction: The Internet has become an integral part of our lives and has changed the way we live. It has not only opened up new avenues but also increased the vulnerability to online scams. We present one such case and discuss its ramifications.
Case: A 46-year-old single businessman was picked-up from his home by cops as he had expressed suicidal ideation over phone to a credit card agent. He was irritable, hyperverbal, and showed poor judgment. He was desperate to get discharged as he had to send money to his girlfriend for her to take the next flight to the US. He had met her on the Internet and was convinced that once they marry he would be inheriting millions. He met DSM-IV TR criteria of Bipolar Disorder with current episode manic and was admitted.
As his mood stabilized and mood congruent delusions subsided; he provided insight into the manic behavior. He reported decreased need for sleep and increased need for stimulation started about 2 months ago. He started spending more time browsing dating sites and was contacted by a European woman from Africa. She started sending her photographs with sexually explicit content and convinced him that they will get millions in inheritance if he marries her. He was in full blown mania, didn't see any problem. However, the only thing that was coming in between him and meeting his virtual friend were some minor "cash flow" issues. She persuaded him to wire money for various other "pressing issues" too. It was only after sending "a lot of money" and getting into debts, he became somewhat anxious and his family noticed a change in his behavior. They realized he was lured by 'Nigerian bridal scam' and warned him about the catastrophic consequences which didn't faze his reckless optimism and behavior.
Discussion: Mania is generally hard to miss. The expansive or irritable mood coupled with uninhibited expressiveness and grandiosity makes it easier to spot these patients; especially by family members, friends, and sometimes even by public. While typical manic symptoms were present in our patient, his mother, who lived with him, was surprisingly unable to spot his emerging symptoms. During the family meeting, they reported that the typical symptoms he usually exhibited during previ-

ous episodes, e.g., rearranging the furniture, and working on several business projects, were not present this time. Instead of being more visible and interactive, he was isolating himself to his room. In reality, he was not isolating himself; he had found an outlet in the virtual world of Internet without leaving the home.

This case highlights that our patients, especially manic, are vulnerable to such online scams. Their indiscretion, hypersexuality, and risk taking behavior make them an easy prey. Further, given the symptoms are not overtly visible it could cause a delay in its recognition and management, as happened in this case.

**NO. 23**

**USING QUALITY IMPROVEMENT METHODS TO IMPROVE CLINICAL ENCOUNTERS IN A COMMUNITY CLINIC**

*Lead Author: Katherine Krive, D.O.*
*Co-Author(s): Divya Vemuri, M.D.*
*Henry Ford Health System*

**SUMMARY:**

Introduction

With the implementation of Affordable Care Act (ACA), health care systems are making efforts to streamline delivery of care and implementing mandatory recommendations for standardized electronic medical records (EMR). At Henry Ford Health System (HFHS) we have a robust plan of action for EMR implementation across the board. However some of the stand-alone community clinics do not have resources to implement some of these recommendations. In the city of Detroit, Michigan these community clinics serve patients with multiple pressing needs. In 3rd year of training psychiatry residents at HFHS spend 4 months at one such clinic one half day a week. Our community partner clinic primarily relies on paper-based charts for documentation compared to state of the art EMR at HFHS. The objective of this study was to use Quality Improvement (QI) techniques to enhance patient care through standardized comprehensive documentation of patient encounters during our community clinic experience.

Methods

The QI technique of plan-do-study-act was used for the process of changing clinical documentation to better assist patients. A pre-existing clinical encounter form for psychiatry residents was used as a template and based on perceived gaps (felt need) it was systematically updated to add several key clinical elements. Patient notes were then assessed for inclusiveness of clinically necessary information.

Results

Post-intervention documentation was more inclusive of the necessary clinical elements. Items added included: vitals, scores from standardized scale, list of previous medications, medication compliance, adverse drug reactions and labs. Copies of forms such as the Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder Assessment (GAD-7), Adult ADHD Self-Report Scale (ASRS), Abnormal Involuntary Movement Scale (AIMS), Yale-Brown Obsessive Compulsive Scale (Y-BOCS), and Montreal Cognitive Assessment (MOCA)/ Mini Mental State Exam (MMSE) were organized for regular clinical use.

Discussion

Significant improvements in documentation were noted as a result of this resident driven QI project. We anticipate this endeavor will also assist in the transition of care between residents. With the new process and documentation, residents are routinely documenting and evaluating required lab work, vitals and standardized instruments. With this project we hope that the care delivery and patient outcomes at our partner community clinic will be aligned with the overall standard of practice at HFHS thereby reducing health care disparities.

**NO. 24**

**INTEGRATING HEALTH AND MENTAL HEALTH IN SCHOOL-BASED HEALTH CENTERS: CHALLENGES AND SUCCESSES**

*Lead Author: Karen Lai, M.P.H., M.S.*
*Co-Author(s): Sisi Guo, M.A., Roya Ijadi-Maghsoodi, M.D., Sheryl Kataoka, M.D.,M.S.H.S.*

**SUMMARY:**

Introduction. Many of our nation's most vulnerable and impoverished ethnic minority youth do not have adequate access to quality health and mental health care. Without needed services, these students are at risk for poor health outcomes and school performance. School-based health centers can provide integrated health, mental health, and educational services within a coordinated, community-based model. The Los Angeles Unified School District has recently developed a network of 14 Wellness Centers, school-based health centers designed to provide comprehensive prevention and treatment of health and mental health problems. These Wellness Centers are located in Los Angeles communities with some of the greatest health risk factors and exposure to violence in the District. This study examines how these Wellness Centers integrate mental health care with health and educational services, and identifies challenges and innovations across sites. Methods. We conducted 43 qualitative key informant interviews of health providers, mental health counselors, and coordinators at each Wellness Center. Each semi-structured phone or in-person interview lasted about 45 minutes and covered topics involving resources, practices, and perspectives on mental health coordination. Analysis was based on grounded theory, and Atlas ti was used in coding data for main themes and subthemes. Results. These interviews revealed various successes and barriers across the Wellness Centers, notably within three major domains: 1) partnerships between school representatives, community health agencies, and mental health agencies; 2) Wellness Center operations; and 3) parent, student, and teacher engagement. We discovered several common barriers across sites, such as educational and health privacy laws that have prevented complete sharing of patient information. On the other hand, the diverse organizational setup of health and mental health agencies across sites has inspired unique innovations, such as shared medical and mental health appointments and mental health screening during sports physicals. In the context of presenting such findings under these three main themes, we discuss the factors involved in mental health integration in the school-based setting. Discussion. Based on these findings, we make recommendations to improve the effectiveness and sustainability of these innovative, integrative efforts. Specific suggestions involve standardization of leadership and coordinating roles across sites; emphasis on accountability, comprehensiveness of services, and prevention; and focus of

engagement on stakeholder groups and identified barriers.

**NO. 25**

**ASSOCIATIONS BETWEEN METHOD OF TRIAGE AND ENGAGEMENT IN MENTAL HEALTH CARE AMONG VETERANS AT THE SAN FRANCISCO VA MEDICAL CENTER**

*Lead Author: Chuan Mei Lee, M.A., M.D.*
*Co-Author(s): Margaret Shirley, M.D., M.S., Kewchang Lee, M.D.*

**SUMMARY:**

INTRODUCTION:
The Department of Veteran's Administration (VA) has mandated the implementation of co-located, collaborative care clinics, in which behavioral health providers (BHPs) are embedded within primary care practices. Currently, there are three main methods for triage and entry into mental health care at the San Francisco VA: 1) in-person triage within a co-located, collaborate care clinic, 2) in-person triage within the emergency department, or 3) telephone triage. What is unknown is whether in-person triage, which is thought to improve patient-provider alliance, especially within a collaborative care model actually improves engagement in mental health care.

OBJECTIVE:
To ascertain whether the method of triage is associated with increased engagement in care (higher likelihood of patient follow-up with behavioral health and shorter patient referral wait times) among San Francisco VA patients referred to behavioral health care.
METHODS:
This is an observational, retrospective cohort study over the course of 10 months. The study group consists of patients who received in-person triage within a co-located, collaborate care clinic by a psychiatry or psychology trainee, staff psychologist, or nurse practitioner. The comparison groups consist of patients who received 1) in-person triage within the emergency department by nursing staff or 2) telephone triage by a licensed clinical social worker. The outcomes of interest include patient follow-up after initial triage and length of time to behavioral health appointment after initial triage. Groups will be compared using ANOVA and Chi-square tests.
RESULTS:
This poster will present the results of this study. It is hypothesized that among patients who received behavioral health triage, in-person triage in primary care is associated with increased likelihood of follow-up with their subsequent behavioral health care appointment and decreased referral wait times.
DISCUSSION:
Prior studies have shown that collaborative care clinic models improve a number of patient outcomes in mental health (best studied in depression), including improved clinical and quality of life outcomes. It is thought that better patient-provider alliance improves treatment adherence and engagement in mental health care. Further studies are needed to parse out factors associated with increase engagement in care.

**NO. 26**

**CHANGES IN COGNITION AS A RESPONSE TO DEPRESSION TREATMENT DURING INPATIENT PSYCHIATRIC HOSPITALIZATION**

*Lead Author: Luba Leontieva, M.D.*
*Co-Author(s): Luba Leontieva, MD, PhD, Sergey Golovko, MD, PhD, Aadhar Adhlakha, MD, Lyuba Polinkovski, MS3, Charles Harris, MD, Donald A. Cibula, PhD, Thomas Schwartz, MD, and James L Megna MD, PhD*

**SUMMARY:**

The goal was to investigate whether depressed patients' cognition changed depending on treatment with SSRIs vs. SNRIs during an inpatient stay. Participants were 119 depressed inpatients, average age 39 years, 61% females, 77% Caucasian, 74% with mood disorders, 50% Cluster B traits/disorders,and 32% psychoactive substance abusers. Measures: Trail Making Test (TMT)A, Hamilton Depression Rating Scale (HDRS), and Outcome Questionnaire-45(OQ-45). Results: paired t-tests comparing patients' performance at admission (A) and discharge (D) revealed significant differences in HDRS scores (MA = 24, MD = 9, $t(98) = 25.30$, $p < .001$), and OQ-45scores (MA = 105, MD = 72, $t(97) = 12.91$, $p < 0.001$). Baseline-adjusted mean TMT A scores at discharge were 43.65 sec. (SD = 3.28 sec, n = 72) for the SSRI group and 33.40 sec. (SD = 3.92, n=50) for the SNRI group ($t(120) = 2.00$, $p=.047$ . Conclusions: patients' cognition improved as their depression lifted during an inpatient stay. Their functioning improved concomitantly.

**NO. 27**

**DEPRESSION DURING PSYCHIATRIC RESIDENCY: OBSERVATIONS AT A STATE SAFETY-NET HOSPITAL**

*Lead Author: William G. Levitt, M.D.*
*Co-Author(s): Charlotte Primo, MSIV*

**SUMMARY:**

This study was conducted to look at occurrence of depressive features at a 323 bed community based psychiatric residency program in a state safety net hospital with a higher than average level of workload and resident demands to determine how a self-administered depression inventory could be best used to increase awareness of depressive features that might negatively impact the resident and his ability to care for his patients and learn properly.
This study will be conducted by presenting residents at various PGY levels self-administrable inventories to assess for depressive features via the Inventory of Depressive Symptomatology-Self Report (IDS-SR). Residents will complete their self-inventories anonymously.
The study will be expanded to a nearby university psychiatric residency program with a different patient population and patient load to compare the presence of depressive features.
As this research is currently in progress, discussion and conclusion will be drafted at a later date. However, it is expected that residents at the community based program will have higher rates of depressive features. This will lay the foundation for further study into possible ways to reduce depressive aspects in psychiatric residents.

**NO. 28**

**RISING TO THE CHALLENGE: THE RESPONSE TO HURRICANE SANDY IN A PSYCHIATRIC EMERGENCY ROOM**

*Lead Author: Kandace Licciardi, M.D.*
*Co-Author(s): Maria Bodic, M.D., Theresa Jacob, Ph.D., MPH, Abraham Taub, D.O.*

**SUMMARY:**
Background: In October 2012 Hurricane Sandy ravaged the East coast claiming 113 lives and destroying an estimated $65 billion in property. In Brooklyn, NY, several low lying areas were flooded with hospitals, nursing homes, adult homes, as well as private residences and businesses severely damaged. Overnight, hospitals still in operation, like Maimonides Medical Center, were faced with seemingly insurmountable challenges to care for patients in the midst of a natural disaster.
Objectives: 1) To assess the impact of Hurricane Sandy on the number and pattern of visits to the psychiatric emergency room (PER) at Maimonides Medical Center (MMC); 2) To analyze staff's actions and the procedures implemented to address these increased demands; 3) To identify any shortcomings in our response and explore how it can be altered to face future challenges.
Methods: This is a retrospective review of the systems data for the 12 months prior and post Hurricane Sandy. Data are queried from the electronic medical records (HMED and SCM) regarding: 1) total number of PER visits, 2) length of stay in the PER, 3) percentage of admissions and discharges from the PER. We also reviewed the interventions implemented by the designated response unit - the Command Center (CC) and interviewed staff involved in the process.
Results: As expected, the total number of visits increased significantly with the highest increase recorded in the first month post Hurricane Sandy as compared with the same period in 2011. Preliminary data show that the average length of stay in the PER was increased, most likely due to the high volume and lack of additional staff. In terms of staffing patterns there were no increases in assignments to the PER, but there were significant resources identified from the CC including accommodations, free food and parking, shuttles to and from the main public transportation hubs.
Conclusion: The Maimonides Medical Center's Psychiatric Emergency Room rose to the challenges created by Hurricane Sandy through fortitude, dedication and flexibility of staff and the exceptional responsiveness of the administration (CC). However, several system inefficiencies were identified that impacted workflow, many of which have been subsequently addressed. The ability to adapt and create new processes allows the PER to continue serving even greater number of patients in the current healthcare environment.

**NO. 29**

**QUALITY OF LIFE AND MENTAL HEALTH INDICATORS IN COMMUNITY MEMBERS LIVING NEAR OPEN CAST MINES IN NORTHERN COLOMBIA**

*Lead Author: Dyani Loo, M.D.*
*Co-Author(s): Mark Stoutenberg, Ph.D., MSPH, Naresh Kumar, Ph.D.*

**SUMMARY**:
Background:
Recent air quality assessments performed in the northern areas of Colombia impacted by open pit coal mining have confirmed that total suspended particulate matter (TSP) and particles smaller than 10 µm consistently exceed daily and annual standards. Later studies identified areas of pollution near these complexes in order to assist with implementation of decontamination measures. However, to date, limited systematic studies of the impact on community health, quality of life, or mental health in these areas have been performed.
Methods:
This study was conducted in and around the rural communities of La Guajira and Cesar in northeast Colombia. First we examined the geographic distribution of mining sites in relation to neighboring communities, tested local air quality for markers of contamination, and gathered aggregate level data from the neighboring community clinics to collect information about rates of respiratory illness. In addition to objective measures, we met with community leaders and union workers in Cesar and La Guajira to identify general social circumstances affecting the environment and the health of their communities and conducted focus groups in communities of La Guajira and Cesar using the Duke Health Profile to examine physical, mental, and social health and the Patient Health Questionnaire-9 (PHQ-9) to screen for depression.
Results:
Objective levels of air particulates with a diameter of 10 µm or less for our target sites were similar to the nearest largest city and 2-3 times higher when compared to rural sites located 150 km away from the coal mines. Lower levels were observed in physical, mental, and social health-based scores with the majority of individuals screening positive for at least mild depressive symptoms. Respiratory infections were documented as the most commonly seen illness in the nearest clinic that serves this area. Conflicts described between mining companies and communities included poor mediation, lack of resources, inconsistent representation, and conflicts related to cultural sensitivity.
Conclusions:
Although resettlement of the communities in Cesar was supposed to have been complete nearly one year ago, the communities and mines are still stalled in initial phases of planning and the villagers now face recurring food shortage crises so severe that they were recently visited by the UN. High levels of particulates equal to that of larger polluted cities, elevated screening markers among community members for depression, and social conflicts discussed during focus groups all demonstrate the need for improved mediation which is vital in order to for both sides to begin instituting critical services.

**NO. 30**

**EMPOWERING PEDIATRIC PATIENTS WITH CHRONIC MEDICAL ILLNESS: DEVELOPING YOUTH LEADERS FOR IMPROVED TRANSITIONS TO ADULT CARE**

*Lead Author: Celeste Lopez, M.D.*
*Co-Author(s): Wendy Froehlich, M.D., Lauren Schneider, Psy.D, Claire Selinger,M.D.*

**SUMMARY:**
Each year in the United States an estimated 500,000 adolescents with special health care needs turn 18 years old, but the system of care is fragmented, disorganized, and ill-prepared to support new generations of chronically-ill young adults who are surviving longer than ever before. There are drops in self-reported health status after this transition, as health issues are at higher risk of being unmonitored (Tsybina 2012). For example, 30% of young adults with kidney transplants lose their grafts as they transition to adult medical care. Thus, the health care needs of adolescents with chronic conditions are often unmet

as they transition into adulthood. They are at especially high risk for developing mental illness in addition to their medical illness. We have initiated the Pacific Adolescent Leadership Council (PALC), a mentorship group for pediatric patients with chronic illness and their college age counterparts, based on The Adolescent Leadership Council (TALC) at Brown Hospital. These programs are founded on Dr. Richard M. Lerner's principle of Positive Youth Development (PYD), a novel framework for approaching the transition to adulthood for youth with chronic illness that has been successfully deployed in the development of programs and interventions for other at-risk youth (Maslow 2013). From the PYD perspective, the focus is on developing strengths in youth that may contribute to improved disease management and the ability to advocate for oneself in the health care environment, as opposed to focusing on adolescent risk behavior.

The primary group activity is monthly dinner meetings that bring together high school participants and college student mentors, both with chronic illness. Both TALC and PALC are designed to engage youth in leadership activities in the context of longitudinal relationships with young adults who possess the important life skills necessary to take care of their medical conditions. High school students receive mentoring from the college student mentors and the college student mentors receive mentoring from each other and from psychiatry and pediatric providers. Topics discussed include diagnosis, living with an illness, interacting with doctors, school issues, friends, and family relationships. The goals of the project are to decrease loneliness and isolation and increase transition readiness, as reflected by improved adherence, competence, confidence, and positive attitude towards treatment of chronic illness and assessed using standardized questionnaires. Participants act as leaders in designing strategies for reaching out to a broader community about the topics. For example, when discussing interactions with doctors, the group developed a list of suggestions for doctors and suggestions for teens on how to communicate more effectively, which is now being integrated into both part of a newsletter and also is presented to medical students and trainees in teaching sessions conducted by PALC participants.

**NO. 31**

**ATTACHMENT STYLE AND MEDICATION USE IN THE NCS-R**

*Lead Author: Marcia Maciel Santiago, M.D.*
*Co-Author(s): Melissa Stoops, PhD, Lloyd Balbuena, PhD, G. Camelia Adams, MD, MSc, FRCPC*

**SUMMARY:**

Background: Based on early life experiences, individuals develop relatively persistent patterns of relating, broadly defined as "attachment styles". Psychosomatic research has shown that attachment style can influence one's willingness to trust health professionals, engage in treatment and remain compliant. For instance, individuals with psychiatric conditions and avoidant attachment are less likely to engage in psychotherapy and may report negative perceptions of the therapeutic alliance. In contrast, individuals with secure and anxious attachment styles are more likely to engage in psychotherapy, and their attachment style tends to be positively associated with the strength of the therapeutic alliance. Interestingly, no studies to date have examined the relationship between attachment style and psychiatric medication use. We hypothesized that individuals with insecure attachment styles are more likely to use psychiatric medications compared to securely attached patients. In particular, we suspected that avoidant attachment would be associated with higher medication rates, while anxious attachment would be associated with higher number of medication trials. We used the data available from the 2001 National Comorbidity Survey Replication (NCS-R) to examine our hypothesis.
Method: The sample included respondents aged 18 to 65 with any lifetime diagnosis of MDD, SAD, or GAD. The dependent variables included use of prescription and non-prescription medication, including psychothropic medication. Poisson and logistic regression modeling of medication use by attachment style was performed, controlling for age, sex, number of chronic conditions, marital status, education, and poverty index.
Results: 2109 individuals met inclusion criteria. Individuals with avoidant attachment style were more likely to use sleep medication (P=.029), antidepressants (P=.001), tranquilizers (P=.023), and antipsychotics (P=.034) even after controlling for demographic variables and the occurrence of illness. Similarly, individuals with anxious attachment style were also more likely to use antidepressants (P=.019) compared to secure attachment. Contrary to our hypothesis, there were no associations between the number of medications used and attachment style.
Conclusion: This is the first study to date to show that insecure attachment style is associated with increased likelihood of psychiatric medication use when compared with secure individuals, even after controlling for confounding factors. Individuals with avoidant attachment might be particularly at risk, possibly due to difficulties with self-disclosure which can hinder non-pharmacological therapeutic approaches. Limitations: our data has several limitations, pertaining to the cross-sectional data regarding psychiatric medication (e.g. use over the last year) and the life time prevalence of psychiatric diagnosis. Therefore further research is needed to clarify this relationship.

**NO. 32**

**FLORID MANIA FOLLOWING ONE-TIME USE OF IBOGAINE: CAUSALITY VERSUS COINCIDENCE IN A CASE SERIES**

*Lead Author: Cole J. Marta, M.D.*
*Co-Author(s): Wesley C. Ryan, M.D., Ralph J. Koek, M.D., Alex Kopelowicz, M.D.*

**SUMMARY:**

INTRODUCTION: Ibogaine is a naturally occurring psychoactive substance native to Africa with postulated anti addictive qualities, specifically to opiates. With the recent rise in opiate dependence, and ibogaine's illegality, a growing number of individuals have sought treatment in poorly regulated overseas clinics over the last few years. Here we report a series of three cases of individuals with isolated ibogaine use that resulted in de novo and florid mania, as seen in bipolar I disorder.
CASES: Three separate cases presented with a temporal association between ingestion of ibogaine and subsequent development of florid mania. Each patient either procured ibogaine from reported opiate treatment facilities or from illegal sources. In all three cases, patients were diagnosed with Bipolar I, current episode mania, independently by multiple treating physicians, in multiple different settings
RESULTS: Naranjo adverse drug reaction probability scale is ap-

plied to test the hypothesis that the observed adverse reaction, mania, is attributable to the ingestion of ibogaine. The results suggest a probable relationship between the adverse reaction and ibogaine ingestion in these cases.
DISCUSSION: We submit that symptoms of florid mania arose in individuals with no prior manic or psychotic episodes out of character of age of onset of bipolar I disorder. Literature review revealed no prior reports of this adverse effect associated with this treatment. In light of this, ibogaine's growing evidence for efficacy in opiate detoxification as well as its growing popularity, further investigation in more regulated settings should be considered.
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**NO. 33**
**DOCTORS AS GODS: SHOULD PSYCHIATRISTS MAKE PATIENTS DNR AGAINST THE PATIENT'S WILL?**
*Lead Author: Mirabelle Mattar, M.D.*
*Co-Author(s): Alao O. Adekola, M.D.*

**SUMMARY:**
Introduction
Previous studies have shown that increased patient participation in the decision-making process was associated with increased patients' satisfaction. On the other hand, when physicians decide to act on the grounds of beneficence and not involve a patient in decision-making, the action is perceived as a threat to patient's autonomy. In this report, we will examine these issues in a 57 year old man with advanced liver cancer.
Case Report
The patient was admitted initially for shortness of breath and abdominal pain, pneumonia, pleural effusions as well as ascites. The patient has a history of alcohol dependency, end-stage hepatocellular carcinoma, cirrhosis of the liver due to hepatitis C and ethanol use gout and anxiety disorder, not otherwise specified. A psychiatric consult evaluation was then requested for the patient's capacity to "refuse DNR".
On psychiatric evaluation, patient was still insisting on wanting to be a full code if he needed to be resuscitated. He understood the meaning of DNR as well as the consequences of being fully resuscitated; he insisted that he wanted to be alive even if he is terribly sick. According to him, signing a DNR form contradicts his religious views and he wanted to be there for his 2 children. A diagnosis of delirium was made. However, patient was evaluated when he was alert and oriented and was deemed to have the capacity to refuse DNR.
Discussion
This case illustrates the dilemma we often come across in consultation liaison psychiatry. Do we as physicians have the right to deny patient treatment that they want? How much should physicians play god? What is the role of economics in end of life decisions? In this case, we had decided that it is better to err on the side of life.
Conclusion:
When it comes to issues of DNR or of end of life, emotions run high. Physicians and other treatment providers may make decisions based on their past experiences, cultural, religious as well as moral views.

**NO. 34**
**A CROSS-CULTURAL STUDY OF STIGMA TOWARDS MENTAL ILLNESS IN INDIAN POPULATION**
*Lead Author: Amita D. Mehta, M.D.*
*Co-Author(s): Gary Swanson, MD., Anjali Medhekar, MD*

**SUMMARY:**
Mood disorders are present in approximately 10% of the adult population worldwide. Families bear a significant portion of economic costs due to limited government-funded mental health services, while also experiencing a dampened quality of life from the emotional burden of looking after disabled family members. These economic and social burdens contribute to the stigma of mental illness among all cultures. The objective of this study is to help recognize and understand various sources of stigma towards mental illness in the Indian population living in US and India.
We performed an 18 questions research survey among the Indians living in US by asking several questions to identify their attitudes toward mental. To expand upon our preliminary findings, we are administering the survey to Indians living in India to perform a cross-cultural study. The hope is to gain a better understanding of the origin of stigma and to identify future goals to combat stigma.

**NO. 35**
**EVALUATION OF PATIENT FACTORS AND STRATEGIES TO IMPROVE LINKAGE BETWEEN INPATIENT AND OUTPATIENT PSYCHIATRIC SERVICES**
*Lead Author: Megha Miglani, M.D.*
*Co-Author(s): Emily Martin, BA, Martha Shumway, PhD, James Dilley, MD Christina Mangurian, MD*

**SUMMARY:**
Background: Unsuccessful linkage of psychiatric inpatients to outpatient mental health care has been a long-standing issue affecting both the public and private sector.1-3 Prior research estimates that 22-90% of inpatients fail to connect with outpatient services.1 Mental health administrators and researchers have focused on strategies to improve linkage as nonadherence greatly increases the risk of rehospitalization and relapse.3 Unfortunately, most studies on both factors related to linkage, and strategies to improve outpatient follow-up, are more than 10 years old. Some previously identified patient-specific factors included age, diagnosis, sex, legal status, dangerousness, education, comorbid substance use, and length of stay.1-3 Identified potential effective bridging strategies included com-

munication between inpatient and outpatient staff, inpatients starting an outpatient program prior to discharge, and family involvement.1 Given the ongoing struggles with linkage, it may be useful to examine linkage of patients who have participated in these identified bridging strategies.
Objectives: To determine patient-specific factors associated with unsuccessful linkage and nonadherence with outpatient psychiatric treatment and to evaluate current linkage strategies.
Methods:
Study Design: Retrospective chart review
Study Subjects: Psychiatric inpatients from San Francisco General Hospital (SFGH) who are not connected with outpatient psychiatric services and are discharged to community clinic, South of Market Mental Health Services (SOM MHS). Patients were discharged into either a case management program or provided with a "gold card" discharge plan arranged by inpatient and outpatient staff to facilitate immediate access to outpatient care.
Procedures: The electronic records for SFGH psychiatry inpatients were reviewed for discharges between 7/1/2012 and 6/30/2013. Demographic and other patient-specific variables previously identified in the literature were collected. In addition, information on no-shows, cancelled appointments, chart closures, crisis visits, rehospitalizations, was also collected to evaluate adherence.
Data analysis: Multiple logistic regression was used to examine the impact of bridging strategy-case management vs "gold card"-and patient factors on unsuccessful linkage and nonadherence.
Results: There were approximately 100 unique patients discharged to SOM MHS via an established bridging strategy. The study is currently in the data collection phase, so full results are pending.
Conclusions: This study aims to provide administrators with data on patient-specific factors that might explain unsuccessful linkage in the presence of established bridging strategies. Ideally, quality improvement initiatives could be implemented to address some of these factors and improve linkage.
1 Boyer, CB, et. Al, Am J Psychiatry 2000: 157:10
2 Cuffel, BJ, et. Al, Psych Services 2002: 53:11
3 Compton,MT, et. Al, Psych Serv

**NO. 36**

**NITROUS OXIDE: POTENTIAL SUBSTANCE OF ABUSE AMONG PROFESSIONALS**

*Lead Author: Farha B. Motiwala, M.D.*
*Co-Author(s): Dr. Amel Badr, MSc, MD*

**SUMMARY:**

Objective: Nitrous oxide, potential substance of abuse among Professionals
Background: Since the late eighteenth century Nitrous oxide has been inhaled to induce altered state of consciousness. Nitrous oxide became a significant drug of abuse among US adolescents.
Recent Literature review indicates that nitrous oxide also has an antidepressant effect. It increases central sympathetic activity, which mimics effects of ECT on brain. Nitrous oxide also was found to enhance the release of endogenous opioids. It was also found to have partial agonist activity at kappa, mu and sigma receptors and thus induces antidepressant effects.
We present a case in which Nitrous oxide was abused by a dentist to alleviate depression.
Case Narrative
51 years old female who is dentist by profession, who suffered from depression and nitrous oxide abuse admitted to the hospital after she was found unresponsive in her office with a nitrous oxide mask on. Patient was accidently found by her receptionist three hours post she had the gas mask on. On evaluation patient denied that she tried to hurt herself, stating she was "just trying to take the edge off". She reported that she has been abusing nitrous oxide for at least five years .She suffered from depression and cites severe stressors including troubled marriage and losing both her parents. Patient history also revealed past sexual and physical abuse
Discussion:
Nitrous oxide induces euphoric effects by its action on opioid receptors. Nitrous oxide is easily accessible to medical professionals and can be easily administered.
In contrast to the belief that the highest rate of abuse of Nitrous Oxide is among adolescent population, its antidepressant effect made it a possible substance of abuse among depressed professionals. Screening depressed patients among this population for nitrous oxide abuse may help identifying potentially vulnerable individuals who would benefit from targeted treatment and prevention interventions.

**NO. 37**

**ROLE OF SOURCE OF REFERRALS IN ASSESSING THE ACUITY OF CHILDREN AND ADOLESCENTS VISITS TO PSYCHIATRY ER**

*Lead Author: Tarika Nagi, M.B.B.S.*
*Co-Author(s): George Alvarado MD, Theresa Jacob PhD MPH*

**SUMMARY:**

Introduction:
Hospitals are facing overcrowding in emergency rooms (ER) resulting in sub-optimal health care delivery, significant financial strains and hospital closures due to the burden of uncompensated care. Since 2000, nineteen hospitals across the New York City have closed. Children and adolescents visits have been rapidly increasing to psychiatry ER. Characteristic of theses visits can be evaluated in assessing their acuity and diverting non-acute conditions to less emergent settings can help reduce overcrowding and reduce financial strain on hospitals and state Medicaid. We hypothesize that the sources of referrals are significantly related with acuity of psychiatric condition and outcomes of the visits to psychiatry ER.
Objective:
To investigate the impact of source of referral on disposition of children and adolescents brought to a Psychiatric emergency room for urgent evaluation.
Methods:
We studied all psychiatric consultations for patient under 18 seen in the MMC ED between September 1, 2012 and June 30, 2013 (2012-2013 academic years). Variables tracked include age, gender, arrival date, Referral source, Chief complaint, Mode of arrival (walk-in versus ambulance), Boarding status, Diagnosis, Outpatient treatment, Disposition, Previous ER visits, Child protection involvement, Special education services, Foster care, Trauma history, and Outpatient treatment status.
Results:

Preliminary analysis demonstrates that total 571 cases seen between 9/1/12 and 5/31/13; Average of 63 cases a month. Referral rates included 44 % referred by homes, 42% were referred by Schools, 8% were referred by therapists, 4% were referred by other sources and 2% were referred by ACS. 76% of total cases (n= 435) seen and discharged. 9% (n= 51) held for re-evaluation then discharged. 15% (n= 85) were admitted. There were total of 240 cases referred from school over the course of the past academic year (42% of all child psych. referrals); 90% seen and discharged, 5% (n= 12) held for re-evaluation, then discharged, 5% (n= 12) required admission. Admission rate via referral source was 15% for all, 20% referred from home, 5% referred from school. Also, there was variation noticed in age groups. It was seen that school referrals mostly consisted of age group less than 12 and referrals from home mostly consisted of age group>12.
Conclusion:
Our data shows that disposition of cases was significantly related to the source of referral. Patients that were referred by schools for urgent psychiatric assessment were most commonly discharged and the majority of patients did not require ongoing psychiatric care. On the other hand, referrals from homes or by professionals were more symptomatic and had higher admission rates. This disparity in results could be due to familiarity of the referral source with the patient. Based on source of referrals, calls can be diverted to less emergent settings which can prevent substantial consumption of ER resources.

**NO. 38**
**INTRODUCING OCD, PTSD, AND OTHER PSYCHIATRIC DIAGNOSES TO AN IMMIGRANT POPULATION VIA TELEVISION AND RADIO MEDIUM**
*Lead Author: Elizabeth T. Nguyen, M.D.*
*Co-Author(s): Vineeth P. John, M.D.*

**SUMMARY:**
Mental illness may affect anyone, regardless of their age, ethnicity, social status in society. Studies show there are populations, i.e minority populations, are less likely to seek psychiatric care than others. Contributing factors may be lack of knowledge about mental illness or having stigma that hinders them to seek help even when needed. In certain minority populations, various factors may contribute to the increased risk of psychiatric illnesses, such as trauma and psychosocial factors such as poverty. Undiagnosed, untreated mental illness may have profound effects on family members and society as a whole.
The role of psychiatrists is to treat mental illnesses. But just as pivotal in the overall improvement of patients' health is spending time to educate them and their families. Above that, to educate the general population about mental illness may be the driving force behind patients seeking help in the first place! As such, my projects on utilizing television and radio media to promote mental health awareness has been effective in decreasing stigma about mental illness. Furthermore, it has been a medium to introduce disorders such as obsessive-compulsive disorder, post-traumatic stress disorder, disorders that are unheard of, to an the immigrant Vietnamese population! The shows opened the population's eyes to the vast number of mental illnesses that exist beyond just schizophrenia and bipolar. The live radio show is a medium in which families learn about various mental conditions; it gives them the opportunity to call in live to ask specific questions. This also helps people at home listening to know that they are not the only ones going through the same illness. It allows the general population to have a dialogue about topics that otherwise would be too taboo to talk about.
The television program educates the population about various mental disorders. The medium of television is powerful in that it allows for pictures and videos to help illustrate concepts that may be beyond people's understanding otherwise.
Treating a patient to the point of functioning normally in society is rewarding. Imagine, being able to reach out to an entire immigrant population!

**NO. 39**
**STRESSFUL LIFE EVENTS AND GERIATRIC DEPRESSION IN SOUTH KOREA: CAN SOCIAL NETWORK ACT AS MODERATORS?**
*Lead Author: Ahyoung Paik, M.D.*
*Co-Author(s): Jung-hyun Nam, M.D., Ph. D., Dong-hun Oh, M.D., Ph. D.,Il-bin Kim, M.D., Kang-rok Choi, M.D.*

**SUMMARY:**
Objective: Depression is quite common among the elderly members of the society. Stress-buffering model has been suggested from many studies that took place in other countries but korea. This study aimed to examine the moderating role of perceived social support on the relationship between physical functional impairment, as a source of stress, and depressive symptoms among Korean older people.
Method: The respondents were 639 people aged sixty years who are dwelling in Yangpyung province in Kyunggido, South korea. Interviews were conducted by experienced research assistants. The Geriatric Depression Scale was used to assess depressive symptoms of each participant. Lubben Social Network Scale and Life Event Check List were used to measure perceived social support and stressful life events(SLEs).
Results: Pearson correlational analyses showed that females reported more depressive symptoms than their male counterparts. Using hierarchical multiple regression models, the authors found that the social support measured by Lubben Social Network Scale moderated the influence of the exposure to SLEs on depression, even after controlling sociodemographic, and physical health status were applied.
Conclusions: Findings suggest that social support play distinguished and important roles in the stress-outcome relationship among Korean older people like it was suggested. With our data, to protect elderly people against becoming depressed, subjective and structural dimensions of social support need to be considered.

**NO. 40**
**RELATIONSHIP BETWEEN FATIGUE AND PERCEIVED STRESS, DEPRESSIVE MOOD, AND STRESS COPING SKILLS**
*Lead Author: Soyoung Park, M.D.*
*Co-Author(s): Sook-Haeng Joe, M.D., Ph.D.,Seung-Hyun Kim,M.D., Ph.D, Chang-Su Han,M.D., Ph.D*

**SUMMARY:**
Objectives : Fatigue is the most prominent, severe and chronic complaint defined as a subjective experience of extreme and

persistent feeling of weakness or exhaustion. Fatigue often remains after treatment, among physical and neurological disease patients as well as psychiatric disorder patients. It is also reported commonly in healthy population. When the fatigue is accumulated without proper resolution, it can cause the interruption in occupational functioning, interpersonal relationship and physical/casual performances. In this study, we aimed to explore the relationship among fatigue and perceived stress, depressive mood in the healthy working population. We also examined associations with demographic and life style factors and investigated the effect of individual coping skills on these associations.
Method : Fatigue Severity Scale(FSS), Perceived Stress Scale(PSS), Brief Encounter Psychosocial Instrument – Korean version(BEPSI-K), Beck Depression Inventory (BDI), Stress coping skill Questionnaire were administered to 621 healthy working population. All of above and other demographic factors are self-administered questionnaire survey and this study is cross sectional.
Results : Mean FSS score is 3.04 which is lower than 3.22, the severity cut off score. FSS, PSS, BEPSI-K, BDI were all higher in female than male significantly. Fatigue positively correlates with perceived stress and depressive mood (correlation coefficient : 0.461, 0.360, $p<0.05$). Subjects with active coping skills showed relatively low fatigue, perceived stress, depressive mood than those with passive coping skills. Especially, subjects who use problem focused coping skill more than others showed significantly negative correlations with fatigue, depressive mood (correlation coefficient : -0.098, -0.234, $p<0.05$). Logistic regression analyses indicated that the PSS, BDI, BEPSI-K in working population increase the risk of fatigue and regular exercise lower the risk.
Conclusion : In this study, we verified multiple variables that affect to fatigue and also investigated the relationship between fatigue and perceived stress, depressive mood. The most significant finding from this study is that adults who afflicted by stress, experience more depressive mood or physically inactive are at much higher risk of feeling fatigue. Since no other large data sets are available for fatigue in healthy adults group research, the results from this study could serve as a basis for comparison with future research results based on more complete data. The practical implication of these findings is that a reduction in the risk factors, through providing proper management to alleviate depressive mood, training the effective coping skill to manage stresses and a regular exercise will reduce the probability of fatigue, ultimately with an expectation of amelioration of psychiatric problems.

**NO. 41**

**THE SUCCESSFUL USE OF PREGABALIN IN THE MANAGEMENT OF AUTISM, ANXIETY AND CHALLENGING BEHAVIOUR**

*Lead Author: Rupal Patel, M.B.B.S.*
*Co-Author(s): Richard J Hillier, MBBS, Ph.D, Sarah Maber, MBBS*

**SUMMARY:**

Autism is a complex developmental disorder which is characterised by impairments in social interaction, imaginative thought and communication. Comorbid anxiety is a common occurrence and this anxiety often presents as challenging behaviour. Pregabalin is a GABA receptor antagonist prodrug which is licensed for the treatment of generalised anxiety disorder (GAD) (1). Here, we report preliminary results on the use of Pregabalin in combination with a behavioural programme in adults with intellectual disability and autism. We report the successful use of Pregabalin in reducing the frequency and severity of challenging behaviours in autism, thought to be due to anxiety.
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**NO. 42**

**PRESCRIBING PRACTICES IN THE FAR NORTH: A SWAMPY CREE PERSPECTIVE**

*Lead Author: Melissa Pickles, B.Sc., M.D.*
*Co-Author(s): Corinne Isaak, MSc, PHEc, Lawrence Kirmayer, M.D., FRCPC, Jitender Sareen, M.D., FRCPC*

**SUMMARY:**

Prescription medication abuse has become an increasingly important public health concern in North America. A recent study on prescription drug abuse amongst Canadian youth indicated that Aboriginal youth may be particularly at risk (Currie, Wild et al. 2013). Yet, a review of prescribing practices in Ontario showed that Aboriginal patients were prescribed opiate medications at higher rates than the general population (Dhalla, Mamdani et al. 2009, Canada 2012). Canadian Aboriginal people may also be prescribed certain psychoactive medications at an increased frequency, such as benzodiazepines (Anderson 2000) and anti-depressants (Wardman 2004). This is in spite of some evidence which indicates that Canadian Aboriginal people may be less likely to prefer pharmacotherapy, and that multiple historical and current social stressors may be at the root of mental health presentations (Voyer 2005, Oldani 2009, Canada 2012). In this study, members from eight Swampy Cree communities in Northern Manitoba participated in interviews examining their views on suicide in their communities. Although researchers did not ask specifically about views on pharmacotherapy, participants frequently discussed the topic. Some felt that addiction to prescription medications was a major problem in their community, and a possible risk factor for suicide. Overdose from medications was identified as a known means for suicide itself. Others felt that medications were perhaps an inappropriate intervention, and felt that counseling or other alternative methods could have been more effective. This may have impacted their opinion on the usefulness of seeking Western practitioners for mental health care. Specific medications discussed included prescription pain medication, anti-depressants and sedatives. However, views on pharmacotherapy were not all negative, with a minority of participants identifying pharmacotherapy as a possible solution for reducing suicide rates, and non-compliance as a risk factor for suicide. Practitioners were also cautioned against denying Aboriginal patients needed prescriptions because of a stereotyped view that all Aboriginals would be prone to addiction. A recent report on cultural safety echoed this concern (Canada 2012). In remote Northern communities, where physician turnover can be high, visits brief and resources limited, pharmacotherapy may seem like a particularly attractive solution for mental health complaints. Exploring patient preferences for treatment, and considering alternatives to pharmacotherapy may help to limit some morbidity and improve treatment engagement.

**NO. 43**

**"LET'S TALK ABOUT IT": A PUBLIC HEALTH APPROACH TO MENTAL HEALTH AWARENESS FOR 8TH GRADERS**

*Lead Author: Stefania Prendes-Alvarez, M.D., M.P.H.*
*Co-Author(s): Ana E. Campo, M.D., Brisas Flores, Guillermo Prado, Ph.D.*

**SUMMARY:**
Objective:
It is estimated that up to three-quarters of troubled youth do not get the mental health help they need. The stigma associated with mental illnesses is inarguably one of the reasons why these individuals may not seek assistance. "Let's Talk About It" is a 4 week-long, school-based, mental health awareness intervention for 8th graders. It was created in 2009 to decrease the stigma associated with mental illnesses by increasing adolescents' knowledge and attitude about them. A second objective of the program is to understand adolescents' intention to seek mental health care if they need it and to determine whether the intervention can positively influence this intention.
Method:
"Let's Talk About It" consists of four 75-minute after-school sessions. The outline of sessions is as follows: 1) Introduction to Mental Health & Stigma; 2) Mood Disorders & Anxiety Disorders; 3) Eating Disorders & Substance Use Disorders; 4) Violence & Coping Skills/Stress Management. In 2012-2013, 52 MD/MPH students from the University of Miami Miller School of Medicine were trained on how to deliver the "Let's Talk About It" program as a requirement for one of their classes. Every student had a partner and each pair was responsible for 2 visits. Pre- and Post-Intervention data was collected in the form of questionnaires. The project assessment battery consisted of: demographics questionnaire, mental health attitudes questionnaire, mental health knowledge questionnaire & theory of planned behavior questionnaire. The theory of planned behavior questionnaire consisted of 4 subscales: help-seeking intention, attitudes towards help-seeking, subjective norm and perceived behavioral control. Paired sample t tests were conducted to examine pre- to post-intervention changes.
Discussion/Significance:
A total of 153 8th grade students from 15 public schools participated in the "Let's Talk About It" intervention in academic year 2012-2013. There was a significant improvement in knowledge about mental illness. The mean total score increased from 6.28 (2.23) correct to 7.87 (2.72) correct (p=0.001). Three out of the four subscales from the theory of planned behavior questionnaire had significant improvement; there was no significant change in the subjective norm subscale. The data from the mental health attitudes questionnaire is still being coded and analyzed. The available results from 2012-2013 demonstrate that "Let's Talk About It" has a positive influence on 8th graders' mental health knowledge, help-seeking intention, attitudes towards help-seeking and perceived behavioral control. This data suggests that the stigma associated with mental illnesses could potentially be overcome via an educational intervention designed for middle-school aged kids.

**NO. 44**

**DISASTER PREPAREDNESS OF PSYCHIATRY RESIDENTS**

*Lead Author: Muhammad Puri, M.D., M.P.H.*
*Co-Author(s): Kalliopi-Stamatina Nissirios, MS*

**SUMMARY:**
A questionnaire adopted from the AMA guidelines for disaster management was given to residents and medical students. It consists of 20 questions addressing: Previous knowledge in disaster management. Understanding the role as team leaders during disasters. Ability to understand chain of command and organize communication with other disciplines including police, fire dept. and other health care professionals. The aim of this study is to design and evaluate the outcome of implementing disaster response training curriculum as part of core didactic curriculum in preparing psychiatrists to be qualified as team leaders and first line responders in disaster management.

**NO. 45**

**UTILIZATION OF ACUPUNCTURE TREATMENT IN DIFFERENT POPULATIONS IN AN OUTPATIENT COMMUNITY MENTAL HEALTH CLINIC**

*Lead Author: Meena Rajendren, M.D.*
*Co-Author(s): Meena Rajendren,MD, Emily Martin,BA, Martha Shumway, PhD, Christina Mangurian, MD, James Dilley, MD, Hung-Ming Chu, MD, PhD*

**SUMMARY:**
Objectives:
At the conclusion of this session, the participant should be able to: have a basic understanding about acupuncture and its use in different populations with severe mental illness served in community mental health clinics.
Background:
Few studies have examined the use of acupuncture in the context of community mental health services for people with severe mental illness. The community mental health clinic serving San Francisco's Chinatown has a full-time acupuncturist, providing an opportunity to characterize the patients who receive acupuncture, the acupuncture treatment they receive, and the relationship between acupuncture and use of traditional mental health services.
Methods:
Study design: Chart review and patient interviews.
Character count: no space=1,784, with space=2,062

Study subjects: Psychiatric outpatients served in a community mental health clinic in the Chinatown North Beach neighborhood of San Francisco, CA. This population is predominantly Asian American, publically insured, and severely mentally ill.
Procedures: All charts of people referred for acupuncture treatment from July 2012 to June 2013 will be reviewed. Demographic and diagnostic characteristics and mental health service utilization will be abstracted. Indications for referral to acupuncture, the acupuncturist's clinical formulation, and nature of acupuncture treatment will also be recorded. Additionally, patients receiving acupuncture currently will be randomly selected and invited to participate in individual interviews to assess their perception and reactions to acupuncture treatment.
Results: This study is still in data collection phase, so further results are pending.
Conclusion: This will be the first study to our knowledge to examine the use of adjunctive acupuncture for people with severe mental illness served in community mental health clinics.

**NO. 46**
**IMPLEMENTATION OF COST-EFFECTIVE INITIATIVES TO IMPROVE THE PHYSICAL HEALTH OF CLIENTS IN PERSONALIZED RECOVERY ORIENTED SERVICES PROGRAMS**
*Lead Author: Karen Rice, M.D.*

**SUMMARY:**
Background: New York State's Personalized Recovery Oriented Services (PROS) Programs deliver recovery-oriented treatment and rehabilitation services for individuals with severe mental illness (SMI). Through the use of Individualized Recovery Plans and a flexible Medicaid reimbursement schedule, PROS Programs deliver customized, coordinated services in a variety of settings. However, PROS Programs struggle to meet the physical health needs of their clients, as PROS regulations and funding do not include provisions for primary medical care beyond a registered nurse. As a result, integrated care is both challenging and time consuming.
Objectives: This poster presentation will report on the implementation of initiatives to improve physical health of PROS patients within the constraints of the program funding and structure. Goals of these initiatives are as follows: (1) Increase awareness of and knowledge about physical health issues amongst clients and staff; (2) Improve access to primary healthcare in the community and facilitate communication between off-site providers, PROS staff, and clients; and (3) Implement activities and groups into PROS curriculum to foster healthy living skills.
Methods: Weekly clinical conferences with medical staff and program directors were established to evaluate and plan strategies for improving client health. Questionnaires were administered to staff to identify medical topics of interest for formal MD presentations. PROS staff was educated about common medical conditions affecting clients. Staff initiated groups in the PROS curriculum that addressed the physical health goals of clients. A list of PCPs meeting the needs of PROS clients was created and contacts with other community providers were initiated.
Outcomes: Indicative of our PROS program becoming more attentive to physical health of clients, medical issues have been integrated into intake evaluations, individualized recovery plans, and team meetings. A network of care was created through outreach to area PCPs and designation of a lab in the community for PROS clients. Access to primary care was further improved by identifying and training peer advocates to accompany clients to off-site appointments. Efforts to incorporate physical health into the PROS curriculum are ongoing; thus far, initiatives have included a weekly walking group and smoking cessation groups.
Discussion: Though PROS regulations do not stipulate sustainable programs to address physical health of clients, the resources to do so are available within current PROS structure. This report highlights successful initiatives to integrate physical health into PROS programming and provides a model for similar programs looking to improve client health in an economically feasible and clinically appropriate manner.

**NO. 47**
**EVIDENCE-BASED ASSESSMENT AND REDUCTION OF VIOLENCE FOR INPATIENT PSYCHIATRY**
*Lead Author: Jeffrey Seal, M.D.*
*Co-Author(s): Bernard Lee, M.P.H., Christina Mangurian, M.D.*

**SUMMARY:**
Background: Approximately 25% of patients admitted to San Francisco General Hospital inpatient psychiatry annually are estimated to have a history of violence. As budgets and inpatient beds are reduced, only the most severely mentally ill are hospitalized, increasing violence risk for both patients and staff. Historically, inpatient violence risk assessment has relied on clinician experience which has proven ineffective. Research has shown that by structuring this decision using violence risk assessment tools, the predictive value of violent behavior increases. To our knowledge, no risk assessment tools have been linked to evidence-based pharmacologic interventions to reduce violence on inpatient psychiatric units (e.g., clozapine, valproic acid).
Objectives: We hope to reduce violence on the SFGH inpatient psychiatry units by the implementation of a modified HCR-20, a violence risk assessment tool. The clinical subset of questions of the HCR-20 has been validated as predictive of inpatient violence. We will pilot the implementation of this assessment tool coupled with associated evidenced based interventions during inpatient admission. We plan to examine feasibility of implementation and preliminary measures of efficacy.
Methods: During a 3 month pilot period, we will determine feasibility of implementation by examining the completion rate of the modified HCR-20 by inpatient attending psychiatrists for all patients admitted. We will compare this period with a prior and comparable 3 month period to examine for possible reduction in violent episodes, seclusion and restraint, and need for emergent medications. We will also examine whether staff perception of safety was improved post-implementation.
Results: Pending. We have started planning and will implement the assessment tool in January 2014. A final report will summarize the outcome variables and barriers that may have existed in implementation of the assessment tool.
Conclusions: Evidence has shown that clinician prediction of violence risk improves with the use of a violence risk assessment tool. To our knowledge, no prior studies have examined use of these tools coupled with evidence-based pharmacological interventions. This project helps to fill a gap in understanding feasible tools that may be effective in reducing violence in inpatient psychiatric settings.
A Hearts Grant from the SFGH Foundation supported this project.
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Psychiatry on June 17, 2013. Also review of a hospital report written by Dr. Leary entitled, "Performance improvement & patient safety committee report," March 27, 2013.
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**NO. 48**
**DEPRESSION: AN INDICATOR OF VENTRICULO-PERITONEAL SHUNT FAILURE IN A PATIENT WITH NORMAL PRESSURE HYDROCEPHALUS**
*Lead Author: Samreen Shah, M.D.*

*Co-Author(s): Anil Jain, MD*

**SUMMARY:**
Normal pressure hydrocephalus (NPH) mostly idiopathic, surgically correctable, classically presents as progressive dementia, urinary incontinence and gait disturbance. Early course of illness may be characterized by apathy, inattentiveness, agitation, and psychomotor slowing which mimic depression and delay recognition and treatment. Rarely, prominent psychiatric symptom like depression can be a presenting feature. After treatment with Ventriculo peritoneal shunting, depression resolves. If the shunt fails, symptoms may recur with depression presenting before the cardinal features set in.
Case Presentation:
A case of NPH is discussed which presented with severe refractory depression. A 40 Year old female was diagnosed with hydrocephals at age 18 yrs. CT scan showed dilated supratentonal ventricular system and normal fourth ventricle. There was widening of cortical sulci. She underwent shunt placement, which led to resolution of symptoms. Following this she needed a shunt revision in her early 20's. However prior to this revision she presented with severe depression which was not responding to antidepressive therapy. She was finally recommended ECT. A CT scan and VP flow revealed that shunt was not working. After correction of the shunt, depression also resolved. She presented with depression followed by gait imbalance and urinary incontinence on two more occasions and every time, the reason was shunt failure, correction of which led to resolution of the psychiatric symptoms.
Discussion:
Majority of NPH patients present with classical triad and psychiatric symptoms develop after appearance of classical symptoms. The development of psychiatric symptoms may be related to disturbed CSF circulation and ventricular enlargement. A review of literature reveals that association of depressive symptomatology and NPH has received little attention in psychiatric literature. NPH may manifest its presence by behavioral symptoms as in our patient. Initially, the symptoms often manifest themselves as depression. There is need to include NPH in differential diagnosis of depression. As in our patient, early diagnosis of shunt failure by diagnosing depression as presenting symptom of shunt failure will prevent further brain damage. Identification of high risk groups can be done. We also recommend routine depression evaluation of NPH patients even after shunt placement to predict recurrence of NPH earlier due to shunt failure. In case depression recurs, they should further be evaluated with CT scan and VP flow procedures.
Conclusion:
We present a case of depression complicated by hydrocephalus. The combination of symptoms led to delay in proper diagnosis and treatment. The case underlines that even in the absence of neurological symptoms, brain imaging in depression might be crucial. Such differential of organic cause of depression is necessary to prevent needless deterioration of potentially treatable cause and diagnose shunt failure early.

**NO. 49**
**MULTIPLE PSYCHOTROPICS IN INDIVIDUALS WITH INTELLECTUAL DISABILITY: A SELECTED REVIEW AND CASE REPORT**
*Lead Author: Fatima Siddiqui, M.D.*
*Co-Author(s): Iman Parhami, M.D., Daniel Grimes, M.D., Nathan Centers, M.D., Imran Trimzi, M.D., Gerard Gallucci, M.D.*

**SUMMARY:**
BACKGROUND:
Intellectual disability is a disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, social, and practical domains. Some with this disorder exhibit severe agitation and self-injurious behaviors. Self-injurious behavior refers to acts directed towards one's self that may result in tissue damage. Stereotyped self-injurious behaviors include, but are not limited to, repetitive head banging, face slapping, eye poking, and biting. Aggressive behavior, such as screaming, spitting, kicking and hitting, is also common. These challenging behaviors are usually acutely controlled with psychotropics. These medications are sometimes continued chronically in the community, as their providers may prefer to discontinue them in a more supervised setting.
METHODS:
In this poster, we present a relevant case and a selective review to help clinicians become more knowledgeable with the management of agitation, self-injurious and aggressive behavior in individuals with intellectual disability. Specifically, we also review the empirical evidence behind using common psychotropic's chronically for these challenging behaviors.
RESULTS:
Antipsychotics, sedatives, and mood stabilizers are common medications used to treat agitation, self-injurious and aggressive behavior in this population. In our presented case, an individual with profound intellectual disability is admitted to the hospital for agitation, self-injurious and aggressive behaviors. At admission, she was taking multiple psychotropics (haloperidol 15 mg, olanzapine 20mg, quetiapine 450mg, lamotrigine 300mg, citalopram 20mg, valproic acid 500mg, clonazepam 4mg, zolpidem 5mg QHS, trazodone 300mg QHS, benztropine 1mg, hydroxyzine 75mg, and diphenhydramine 50mg). During the course of her stay, eight of these medications were discontinued, and pregabalin and naltrexone were started. At discharge, she exhibited no self-injurious behavior, her aggressive and agitation significantly subsided, and was on the following medications: olanzapine 20mg, naltrexone 50mg, pregabalin 300mg, diphenhydramine 50mg, valproic acid 1,750mg, and clonazepam 2.5mg.
DISCUSSION:
Our presented case corroborates with previous research that demonstrated the effectiveness of using olanzapine as a mood stabilizer and antipsychotic, pregabalin as an anxiolytic, and naltrexone as an agent to prevent self-injurious behavior. In summary, research is not conclusive regarding the chronic effectiveness of using the typical agents used acutely for agitation and self-injurious behaviors in this population. Individuals with intellectual disability also have co-occurring psychiatric conditions and may be treated with a minimal number of psychotropics and psychosocial interventions. Clinicians should be mindful of the risks and benefits of using multiple psychotropics chronically and readily discontinue ineffective medications.

**NO. 50**
**EXCORIATION (SKIN-PICKING) DISORDER**
*Lead Author: Ayesha Silman, M.B.B.S.*

*Co-Author(s): Ayesha Waheed, M.D.*

**SUMMARY:**
Although, skin picking disorder is not an uncommon presentation encountered within the field of Psychiatry, yet tradionally, it has not received the empirical attention. Consequently, it is not surprising that many clinicians are not very familiar with correctly recognizing and managing this condition. With the inclusion of skin picking disorder (Excoriation disorder) as a discrete entity in DSM 5 criteria under Obsessive Compulsive and Related Disorders, it hopefully will result in much greater understanding of this debilitating condition. We described two cases which met current DSM 5 criteria for skin picking disorder. We attempted to highlight the clinical phenomenology, controversies that surround this condition, and current treatments available.

**NO. 51**

**ANTIDEPRESSANTS AND BRUXISM: REVIEW OF THE LITERATURE**

*Lead Author: Harvinder Singh, M.D.*
*Co-Author(s): Satinderpal Kaur, M.B.B.S., Natalia Ortiz, M.D.*

**SUMMARY:**
Introduction: Bruxism is an involuntary activity of the jaw musculature characterized by jaw clenching, bracing, gnashing, and grinding of the teeth while asleep. Not only is bruxism more commonly a problem in individuals with depression and anxiety disorders, but also the medicines used to treat anxiety and depression can themselves often create a new iatrogenic or worsen a preexisting bruxism even when they successfully treat the target psychiatric problem.
Methods & Results: A total of 17 articles with a total of 26 individual case reports were obtained by manual and computerized literature search from January 1970 to Mar 2013. Relevant information was also derived from reference lists of the retrieved publications. Most cases were attributed to Venlafaxine (7 cases) followed by Fluoxetine (5 cases), Sertraline (5 cases), Paroxetine (3 cases), Citalopram (2 cases), Escitalopram (1 cases), Fluvoxamine (1 case), Bupropion (1 case) and Duloxetine (1 case). Most common reason was increase in the dosage of medications, and bruxism responded to Buspirone (14 cases), dosage reduction/discontinuation (6 cases), Gabapentin (1 case), Tandospirone (1 case) and ECT (1 case).
Conclusions: The exact mechanism of antidepressant-induced bruxism is unclear; however, disturbances in the central dopaminergic system, especially within the mesocortical tract, are linked to bruxism. Especially SSRI-induced bruxism is considered to be a result of serotonergically mediated inhibition of the dopaminergic system. Since Antidepressants are frequently prescribed medications, dentists should be aware of these drugs' side effects when assessing patients with bruxism. Although the prevalence and pathophysiology of SSRI induced bruxism is unknown. The diagnosis of antidepressant- induced bruxism can be challenging to make because it can present with such vague symptoms as bitemporal headaches, masseter tightness, or jaw pain in addition to the classic findings of tooth pain or frank tooth grinding. Prescribers may need to inquire specifically about these symptoms in order to elicit a history of underlying bruxism.

**NO. 52**

**OPERATIONALIZING HOBFOLL ET AL.'S "FIVE ESSENTIAL ELEMENTS OF MASS TRAUMA INTERVENTION" FOR GROUPS OF SURVIVORS OF THE WASHINGTON NAVY YARD SHOOTING**

*Lead Author: Nicholas Tamoria, M.D.*
*Co-Author(s): Patcho Santiago, M.D. Walter Reed National Military Medical Center.*

**SUMMARY:**
Introduction: On Sept. 16, 2013, a lone gunman fatally shot 12 people and injured others in a mass shooting at the Washington Navy Yard, DC. In response the US Navy deployed the Special Psychiatric Rapid Intervention Team (SPRINT): a multidisciplinary team of mental health specialists trained to provide educational and consultative support to agencies affected by disasters. SPRINT leaders facilitated group sessions based on Hobfoll et al's "Five Essential Elements of Mass Trauma Intervention" in order to promote safety, calm, efficacy, connectedness, and hope.

Case: The shooting occurred in a building which contained hundreds of civilian and active duty personnel. The shooter assembled his weapon in the bathroom of the 4th floor and emerged shooting victims at close range without any apparent motive or pattern. Many survivors had direct contact with the shooter. Others never saw the shooter but heard gunshots and associated sounds as they sheltered in place per protocol for an active shooter threat. Security forces killed the shooter after approximately one hour.
In the days following the shooting, SPRINT engaged more than 1000 survivors by facilitating dozens of group sessions over 8 days. These sessions were encouraged but not mandatory and lasted up to one hour. Facilitators opened the session by introducing SPRINT members and their mission. An assessment was made of who the audience was including whether or not any direct survivors were present. Opening questions checked in with the group; invited members to share their current thoughts and concerns; and reassured that participation was not mandatory. This open forum encouraged sharing of personal experiences and generated momentum for discussion. SPRINT members provided psychoeducation and reinforced themes of safety, calm, efficacy, connectedness, and hope. Sessions ended with reiterating available mental health resources for follow-up and providing printed materials.
Discussion: The literature provides empirical support to design interventions based on core principles of safety, calm, efficacy, connectedness, and hope following disasters and mass violence. The scale of these events require early psychological interventions which can impact large populations quickly and effectively. Group interventions meet this need in a cost-effective manner while simultaneously reinforcing these core aspects. Survivors who can process the experience together can rapidly normalize reactions and establish unit cohesion. They are explicitly protected from forced participation to avoid repetition of the trauma. Focused discussion through the core principles provides a natural trajectory and framework for the hour. Psychoeducation is easily accomplished in group. Closing with resources and materials reinforces connectedness and establishes links between individuals and local support agencies.

**NO. 53**

**MULTISITE SURVEY OF SMARTPHONE AND MOBILE APPLICATION INTEREST AND USE BY OUTPATIENT PSYCHIATRIC PATIENTS**

*Lead Author: John Torous, M.D.*
*Co-Author(s): Steven R. Chan MD MBA, Shih-Yee Marie Tan MD, Jake Behrens MD, Peter Yellowlees MD* MBBS, Ladson Hinton MD, Ron Friedman MD, Matcheri Keshavan MD
(Affiliations listed in order of listing above)
University of California, Davis
Louisiana State University Health Sciences Center, New Orleans
University of Wisconsin, Madison
University of California, Davis
University of California, Davis
Harvard University, Beth Israel Deaconness Medical Center
Harvard University, Beth Israel Deaconness Medical Center

**SUMMARY:**
OBJECTIVE / BACKGROUND:
Patient retrospective recollection is the foundation of many mental health diagnoses despite evidence suggesting such is often biased and may be at times incorrect. Paper and pencil mood tracking diaries are a useful means to better capture patient state but are cumbersome and time consuming for patients. However, the rapid rise of mobile technologies, especially smartphones and mobile applications offer a new means to assess patient state in “real time” without significant patient effort or cost.
The potential for patients to use an electronic mood tracking application on their smartphone is appealing on many levels. First, data can be collected in real time and real life situation outside of the clinic. Second, data can be collected easily in seconds by patients filling out interactive surveys. Third, data can be encrypted and securely stored to ensure privacy. However, the promise of mobile applications in mental health is limited by the current limited knowledge of the prevalence of smartphone ownership and willingness to use mobile applications among patients with mental health conditions. This study’s aim is to estimate prevalence of smartphone ownership among patients with mental health diagnoses as well as their interest in using smartphones to monitor their mental health.
METHOD:
An anonymous, voluntary survey of approximately 20 questions was distributed to patients in several outpatient mental health clinics across the United States. Study sites included a Harvard University affiliated outpatient clinic and the Massachusetts Mental Health Center both in Massachusetts, an outpatient clinic at at Louisiana State University in Louisiana, an outpatient clinic at the University of Wisconsin in Madison, and an outpatient clinic at the University of California Davis in Sacramento. The study was IRB-approved at each respective site by the respective IRB boards.
Results were compiled and statistically analyzed with R software.

**RESULTS:**
Initial results of 100 patients at the Harvard University affiliated outpatient clinic demonstrated that 70% of patients there owned a smartphone and over 50% of those owning a smartphone were willing to download a mobile application to monitor their mental health. Of note, patients expressed more interest in using a mobile application than text messaging for monitoring their mental health. Results from other study sites are currently pending but will be completed shortly.
**CONCLUSION:**
A significant percentage of mental health patients own smartphones and actively use mobile applications. Many patients wish to monitor their health conditions with smartphone applications. Customized mobile phone applications have the potential to serve as a new tool and technology in mental health to help better connect, monitor, and treat patients.

**NO. 54**

**ACUPOINT TAPPING IN THE TREATMENT OF POSTTRAUMATIC STRESS IN VETERANS**

*Lead Author: Olli Toukolehto, M.D.*
*Co-Author(s): Patcho Santiago, M.P.H., M.D.*

**SUMMARY:**
INTRODUCTION:
A decade of war has resulted in thousands of military veterans with symptoms of post-traumatic stress (PTS). According to the Department of Veterans Affairs (VA) and the Department of Defense (DoD) Clinical Guideline for the Management of Post-Traumatic Stress, trauma-focused psychotherapies and Stress Inoculation Training are important non-pharmacological treatment interventions. The core components of these interventions include exposure, cognitive restructuring, psychoeducation, and relaxation and stress modulation techniques. Some interventions have been manualized and gained popularity, but the essential concept is that their therapeutic effect is based on these core components. In the context of treatment-resistant PTS and barriers to care in the military, there exists a need for the development of alternative treatment approaches that build on these therapeutic components. “Acupoint tapping” is an alternative approach that attempts to meet this need and is the focus of this review.
METHODS:
Brain imaging in acupuncture research has demonstrated that the stimulation of acupoints with acupuncture needles alters the activity of the human limbic system. Specifically, an inhibitory effect on the amygdala has been observed. It has been hypothesized that PTS therapies that utilize acupoint stimulation may reduce the negative emotional intensity experienced by the patient during treatment, possibly via the inhibition of the amygdala and possibly altering other brain areas. The observation that non-invasive electroacupuncture also has this effect is supportive of the possibility that acupoint stimulation can be achieved without the use of traditional acupuncture needles. If this finding can be generalized to stimulating acupoints with one’s own fingertips, it is possible that acupoint tapping could have clinical utility in the treatment of PTS.
RESULTS:
A literature review reveals preliminary findings that support this hypothesis: one recent randomized and controlled trial on PTSD demonstrated that acupoint tapping (in conjunction with exposure and cognitive elements) had an equal therapeutic effect when compared to EMDR. Another wait-list controlled trial involving veterans with PTSD demonstrated that 4 out of 5 veterans had subclinical symptoms (defined as a PCL-M score <50) after six hours of acupoint tapping. However, it should be noted that there is not enough evidence to currently support the use of acupoint tapping techniques outside of research settings.

CONCLUSIONS:
If future research confirms these findings and acupoint tapping is identified as having an independent therapeutic effect, it could be integrated into pre-existing PTS therapies or possibly serve as a standalone intervention. Also, because it does not require technical supplies, is non-invasive, and can be self-administered, it could potentially increase resiliency and be preventive in nature. Further research in both of these areas is warranted.

**NO. 55**
**A CONTENT ANALYSIS AND POLICY DISCUSSION OF POSTS TAGGED #SUICIDE ON INSTAGRAM**
*Lead Author: Arshya B. Vahabzadeh, M.D.*
*Co-Author(s): Holly, Peek, M.D., M.P.H*

**SUMMARY:**
Introduction
Almost one in five teenagers identified Instagram, a picture-based social media platform with over 80 million registered users, as their most important social network. There is growing concern however that some users of social media networks may experience negative mental health effects, including depression and suicide. Facebook, another prominent social media network, has established a suicide prevention tool. Instagram states that it has a policy of removing content that promotes suicidal or self-harming acts.
Given these concerns, we performed an exploratory study that analyzed if Instagram's policy is effective in removing suicide/self-harm content, and also to describe the content that is labelled by users with the hashtag identifier (#) as "suicide".
Methods
A search on Instagram was created using the search term "#suicide" and a content analysis was performed on the first 60 resulting images. These images were quantitatively analyzed by content as containing pictures or quotes and the following themes: depressive, suicidal, self-injurious, eating disordered, reflective, neutral, humorous or positive. The categories were not mutually exclusive. The images containing suicidal and self-harm content were further analyzed for other qualitative themes.
Results
The quantitative analysis revealed 42% of the images contained pictures and 58% contained quotes. Distribution of the themes were as follows: 50% depressive; 15% suicidal; 12 % self-injurious; 5% positive; 3% eating disordered; 16% neutral; 3% humorous; 13% reflective.
Qualitative analysis for the suicidal theme revealed the following:
• All of those posting were female
• No images for suicide help resources
• Four images visually demonstrated actual methods of suicide, two with hanging and two with pill overdose
• Three images demonstrated text only, including a suicide note and other expressions of a desire to die
• One image of a self-portrait with a suicidal caption
• One image with a humorous overtone
Qualitative analysis for the self-injurious theme revealed the following:
• All of those posting were female
• No images for self-injury help resources
• All images depicted a variation on the theme of cutting
• Four images showed bleeding cuts, including active cutting
• One image was instructive on the method of cutting
• One image described the cuts as "beautiful"
• One image with an encouraging overtone of healing
Discussion
Our findings are quite alarming. It appears that the Instagram policy of identifying and removing content with suicidal/self-harm themes is ineffective. While 27% of images had either a pro-suicide or self-harm theme, no images identified mental health resources or help. Suicidal and self-harm themes were often graphic in nature and included "acts in progress". We must engage with social media networks and the wider public to ensure that these issues do not go unnoticed and attempts are made to remedy them.

**NO. 57**
**IMPACT OF EARLY DETECTION OF PRODROMAL SYMPTOMS AT THE PROGRESSION AND PROGNOSIS OF SCHIZOPHRENIA**
*Lead Author: Mehnaz Waseem, M.D.*
*Co-Author(s): Edward Hall. M.D., Muhammad Burhanullah. M.D., Muhammad W Khan. M.D.*

**SUMMARY:**
INTRODUCTION
There are multiple theories to the development of the childhood schizophrenia, common to all, is the progressive damage to the different areas of the brain at different stages of the development in utero and after birth. The issue of delayed treatment has been linked to the increased irreversible damage, increased morbidity and poor prognosis in most cases.
We conducted extensive internet web search of the literature from 1990 to 2013 to explore the possible outcomes of intervention before the onset of the full disorder.The prodromal stage of illness is a period marked by changes from a person's premorbid mental state and level of functioning up to the appearance of psychotic features (Yung & McGorry 1996). It is reported that most of patients with schizophrenia describe a variety of subacute symptoms in the months and years preceding psychosis, including changes in drive, perception, beliefs, attention, concentration, mood, affect, and behavior (Yung & McGorry 1996). It is believed that much of the disability associated with schizophrenia develops during the prodromal period, in which social withdrawal and emerging negative symptoms form the foundation on which psychosis later develops (Hafner et al. 1999). The North American Prodrome Longitudinal Study concluded that 35% of 291 subjects converted to psychosis over the 2.5-year follow-up period.The European Prediction of Psychosis Study states that out of 183 participants whom were followed up over 18 months, conversion rates were 14% at 12 months and 19% over 18-month follow-up. In "Prevention and Early Intervention Program for Psychoses" study researchers concluded that the patients with a longer delay in treatment of psychosis show a significant reduction in overall grey matter volume. Another study the Portland identification and early referral reported that the education on prodromal symptoms helped the rapid referral of 37% of at-risk youths. This enabled the program to institute early treatment and prevent the damage.
Conclusion:This is evident from the literature that the duration of untreated psychosis is minimum 1-2 years & that a great

majority of patients suffer for several years from non-psychotic prodromal symptoms prior to psychotic symptoms. Moreover, the psychosocial development starts to be delayed or to decline already years before the first psychotic symptoms and the initiation of treatment. Long duration of untreated psychosis is associated with grey matter reductions, poorer clinical prognosis and psychosocial functioning, even when the effect of premorbid adjustment has been taken into account . Preventive measures can be taken during the premorbid period of illness, i.e. before any symptoms or behavioral deviance appear (primary prevention), or during the so-called prodromal phase, i.e. when the first symptoms or signs indicating vulnerability to schizophrenia have occurred (secondary prevention).

**NO. 58**

**OLFACTORY REFERENCE SYNDROME: AN EMERGING DIAGNOSIS OF INTEREST**

*Lead Author: Virginia Yates, M.D.*
*Co-Author(s): Virginia D. Yates, M.D., Roger Duda, M.D., Elizabeth Greene, M.D.*

**SUMMARY:**
Introduction: The purpose of this presentation is to discuss an emerging disorder of interest, Olfactory Reference Syndrome (ORS). ORS is characterized by fear of having an offensive body odor. Though the term Olfactory Reference Syndrome was first introduced in 1971, the syndrome continues to be difficult to classify nosologically. ORS appeared in a Diagnostic and Statistical Manual (DSM) of Mental Disorders for the first time in DSM-V under the category of Obsessive Compulsive and Related Disorders as a variant of the culturally bound disorder jikoshu-kyofu.
Case: A previously healthy male presented with the conviction he had foul body odor which had begun six years prior but had progressed to the degree his ability to sustain work and his marriage were compromised. Throughout his course of care, his diagnosis was changed multiple times and treatment results were disappointing. This case demonstrates the difficulty in categorizing this syndrome.
Discussion: There was a recent proliferation of literature regarding ORS in the context of the development of DSM-V, as efforts to categorize ORS were made. ORS has features of obsessive-compulsive disorder, body dysmorphic disorder, social anxiety and delusional disorder and has been described in cultural contexts to include Japan, United States, Australia and New Zealand. This presentation summarizes the literature regarding this syndrome.

**NO. 59**

**THE PROMOTION OF MENTAL HEALTH SERVICES IN A CHINESE-AMERICAN COMMUNITY: A PRELIMINARY SURVEY**

*Lead Author: Liwen Ye, M.D., Ph.D.*
*Co-Author(s): Scot McAfee MD, Tatyana Poblaguyev MD, Joseph Carmody MD, Theresa Jacob PhD, MPH.*

**SUMMARY:**
Background: Immigrants in Chinese communities in the United States have more obstacles obtaining appropriate psychiatric services than other American communities. The purpose of this preliminary survey is to elucidate the obstacles the Chinese community faces in our community when they attempt to access mental health services.
Method: An anonymous survey was conducted before a mental health seminar in September 2013 in a Chinese Community Center in Brooklyn, New York. The survey had nine questions in both English and Chinese related to knowledge about the mental health and psychiatric services provided by our hospital which is located in the community.
Results: Twenty-seven people, ages 32-81, returned the survey forms. Of these, 44.4% respondents believe that "only crazy people" need a psychiatrist. Sixty-three percent respondents said that, only very few people need to see a psychiatrist. Although 92% answered that they know they need to see a psychiatrist if they feel sad or anxious, 60% did not know about the existence of our hospital's community mental health center.
Discussion and conclusion: It is commonly understood that language barriers make accessing psychiatric services difficult in an immigrant community, but culture, education level and the mental health service structure in a former society can be obstacles too. It is very important for mental health providers to understand the knowledge base of the community and its mental health system so that they can tailor these services. There is still a long way to go to promote mental health as 44.4% of Chinese people in our community believe that only crazy people need a psychiatrist. It is nice to know that 92% of people understand that they should see a psychiatrist if they feel sad or anxious but 60% of the targeted population has no knowledge that our hospital provides mental health services, even though the hospital itself is well known in the community. Amongst many reasons for this lack of knowledge about our hospital's mental health services, one could speculate that it is related to Chinese hospital structure. Almost no psychiatric services were provided in a general hospital setting in China until Mental Health Law passed last year. We need to educate the community that a general hospital like ours has psychiatric services. It will be helpful to expand the survey in the future to understand the Chinese community better and develop services that cater to the specific needs of this population.

**NO. 60**

**SLEEP STATE MISPERCEPTION**

*Lead Author: Vyoma Acharya, M.B.A., M.D.*

SUMMARY:
Refractory insomnia is a common complaint in clinic practice and can be difficult to treat. Providers often resort to polypharmacy as it becomes difficult to determine the exact cause of insomnia. Polypharmacy comes with its own pitfalls and often that too does not lead to desired sleep outcomes. A commonly missed condition is paradoxical insomnia or sleep state misinterpretation. According to International classification of sleep disorder, sleep state misperception is a disorder in which insomnia or excessive sleepiness occurs without objective evidence of sleep disturbance. Patients mistakenly perceive sleep as wakefulness. This poster is an attempt to present additional information about Sleep State Misperception and also to elaborate about the latest advancements in diagnostic tools that can be used in this area including mobile phone apps and actigraphy.

**NO. 61**

**MEDICAL ACADEMIC STRESS AND LEARNING: A TRANSCRA-**

**NIAL MAGNETIC STIMULATION (TMS) STUDY**

*Lead Author: Mohomad Al Sawah, B.S.*
*Co-Author(s): Carmen Concerto MD, Eileen Chusid PhD, Maria Rosaria Muscatello MD, Rocco Zoccali MD, Umberto Aguglia MD and Fortunato Battaglia MD PhD*

**SUMMARY:**
Background: Medical students face very demanding academic programs. Stress is very common among medical trainees and is associated with a negative impact on learning, unprofessional behaviors and increased prevalence of mood, eating disorders and suicidal ideations. Stress in medical students becomes a focus of concern nationally that requires a depth analysis of the determinants leading to stress and the identification of appropriate coping strategies. In this study we sought to study the effect of academic examination on cortical plasticity by using TMS in the attempt to identify a biomarker.
Methods: We tested two groups (n=13 each) of healthy medical students (mean age 33.7+/- 3.8 SE). One group was tested during a final exam week (High stress group) while the other group was tested after a break, during a week without exams (Low stress group). Students were required to fill the Perceived Stress Scale 10 (PSS) questionnaire. Cortical plasticity was evaluated with paired associative stimulation (PAS), by using a well-characterized protocol (PAS-25 protocol) that induced cortical long-term potentiation-like plasticity.
Results: During examination period, students showed lower amounts of cortical plasticity (p=0.029) and higher PSS score (P = 0.036). LTP-like plasticity (60 min after the induction protocol) was inversely correlated with perceived stress.
Conclusion: Examination stress induces abnormal. Deficit in attention and impairment glutamate function might underlie our findings. Our results provide a new opportunity to objectively quantify the negative effect of stress on brain functions and to use this neurophysiological biomarker to design and evaluate psychotherapeutic and behavioral interventions.

**NO. 62**
**EVALUATION OF DIFFERENT FORMATS OF CULTURAL COMPETENCY TRAINING FOR MEDICAL STUDENTS**

*Lead Author: Irina Baranskaya, M.D.*
*Co-Author(s): Vijayabharathi Ekambaram, M.D., Laura B. Smith, M.D., Phebe Tucker, M.D.*

**SUMMARY:**
Introduction: Cultural competency training is essential for medical students during their pre-clinical medical curriculum, helping them better understand cultural aspects of patients' needs and improve quality of services. The ideal format of this training, required by LCME accreditation standards ED-21 and ED-22, is unknown.
Hypothesis: First year medical student cultural competency training is more effective when combining a lecture and small group activity than lecture format alone.
Methods: Our institution provides cultural competency training to first year medical students. In 2012 medical students received two lectures on cultural competency. In 2013 medical students had modified training combining a lecture and small group activity with clinical vignettes role-played by residents. We compared students' responses for the two cultural competency teaching formats. Descriptive summary statistics summarized students' responses, rated on a scale of 1-5, with 1=strongly disagree, 5=strongly agree. We used T-test to compare students' ratings of lecturers' effectiveness and chi-square analysis to ascertain if there was a difference between students' ratings of overall effectiveness of the cultural competency training in 2012 and 2013.
Results: We received 67 responses in 2012 and 80 responses in 2013. In 2012, 56% of students agreed that training by lecture alone was effective, while 75% of students in 2013 reported that combined lecture and small group training was effective; the difference between groups was significant ($p<0.05$). Students' ratings of effectiveness of lectures had also improved significantly in 2013 compared to 2012 (3.34+1.20 in 2012 vs. 3.88+1.20 in 2013, $p<0.01$.)
Conclusion: Our study indicates that combined cultural competency training (lecture and small group activity) was rated by students as more effective than lecture alone. Future studies should assess long-term gains in cultural sensitivity in knowledge and clinical care throughout medical training and into medical careers.

**NO. 63**
**GLOBAL MENTAL HEALTH CURRICULUM**

*Lead Author: Alicia A. Barnes, D.O., M.P.H.*

**SUMMARY:**
There is an increase interest in Global Mental Health in psychiatric education along with growing career opportunities, with international non-profit foundations, academia and local immigrant populations.
A Global mental health curriculum provides a tremendous opportunity to learn about international health issues, intercultural exploration, and cultural humility. This poster is a description of Cooper University Hospital's pilot curriculum.
The rational for a Global Mental Health lecture series and electives is to give insight into cultural considerations working with immigrant populations and comparing systems of delivering mental health across the world. Second, it has been found to increase interest in serving underserved populations. Finally it aids as a recruitment tool for residency programs and to increase scholarly activity.
At Cooper University Hospital Psychiatry Department a global mental health curriculum was established July 2013. The curriculum consists of six, two-hour lecture series, on mental health in different countries. The lecture series is entitled Psychiatry on a World Stage and consists of interactive presentations led by faculty with international mental health experience. In the first year, Cuba, Nigeria, Russia, Philippines, Liberia, and India were presented. The series also included a seminar by the President of the World Psychiatric Association about the field of Global Mental Health and future challenges. Medical students, residents, and faculty attended the series, with an average attendance of 20 people per session. The curriculum created networking opportunities and collaborations between residents and medical students with common interests.
A Curriculum in Global Mental Health is a method to increase learning about various systems of care. It has created discussions and interest in examining mental health systems internationally. The lecture series has served as an avenue to engage residents in the discussion of the impact of culture on psychi-

atric illness. Future directions of the curriculum are to advance to a one-month international elective for residents to have an immersion experience.

**NO. 64**

**A COGNITIVE BEHAVIORAL, BRIEF THERAPY MODEL FOR CANCER SURVIVORSHIP**

*Lead Author: Sanaa Bhatty, M.D.*
*Co-Author(s): Veronica Slootsky, M.D.*

**SUMMARY:**

Introduction: The interface between oncology and psychiatry has been an important topic in psychosomatic medicine and its application to psychiatry training programs is a subject of interest. Current ACGME guidelines do not mention this particular intersection in the field, and thus there is a lack of uniform training criteria with which psychiatry residents are prepared (1). This is noteworthy given the well-documented prevalence of psychiatric morbidity in this population (2). As there have been numerous studies validating the benefits of cognitive behavioral therapy (CBT) in this population (3,4), our institution's psychiatry residents participate in a yearlong brief therapy model primarily using CBT in a cancer survivorship clinic.
Methods: Residents participate in a interdisciplinary team as part of a yearlong psychooncology clinic. Team members include attending psychiatrists, consultation-liaison psychiatry fellows, patient navigators, social workers, nurses, and art therapists. The rotation includes structured didactics and a brief therapy model set in an outpatient psychiatric clinic. When deemed necessary, cancer patients are referred for a psychiatric evaluation.
Following the evaluation, the psychiatry residents may provide a time–limited, short-term goal-oriented therapy approach utilizing cognitive behavioral therapy. Residents receive specific CBT supervision for these patients. In addition, residents participate in interdisciplinary didactics. Topics discussed include the use of mindfulness, the relationship between stress and cancer, spirituality and end of life, screening for distress in oncology patients, among other relevant subjects.
Results: Psychiatry residents increased familiarity with the psycho-oncology patient as well gained experience performing time-limited CBT. The interdisciplinary model allowed for greater communication, reduction in provider anxiety, and greater collaboration in respective areas of expertise.
Conclusions: A brief, CBT psychooncology training model is an effective platform in which psychiatry residents benefit from an interdisciplinary approach and gain confidence in working with the psychooncology patient and addressing their specific needs. This is relevant in the coming era of integrative medicine.

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**NO. 65**

**PSYCHIATRY RESIDENCY TRAINING AND RESEARCH: CAN PRACTICE-BASED RESEARCH NETWORKS (PBRNS) PLAY A ROLE?**

*Lead Author: Ram J. Bishnoi, M.D.*
*Co-Author(s): Cervando Martinez Jr, M.D.*

**SUMMARY:**

The Institute of Medicine (IOM) 2003 report on research training in psychiatry residency emphasized a need to consider residency training as part of a developmental research training continuum, and it concluded that barriers to effective research training during residency included regulatory, institutional, and personal factors. One of the recommendations was that "departments of psychiatry should organize optional research experiences and mandatory research didactics in residency as early steps in research career development". The concept of a specialized research track in residency training is an option for promoting research. Unfortunately, this requires an early declaration of interest by residents and requires a significant amount of time and resources.

Practice-based research networks (PBRNs) are increasingly regarded as important mean to translate research into practice and generate new research ideas. PBRNs help participants recognize adopt systemic approaches to the care of chronic health conditions. In addition to enhancing research literacy within practice, PBRNs increase professional self-worth, promote effective teamwork and communication within the network. We propose that PBRNs can be useful tools for involving psychiatry residents in conducting practice-relevant research in the busy clinical care setting where residents spend most of their training time. PBRNs can in fact, help physicians-in-training in attaining and demonstrating the core competencies set forth by the Accreditation Council for Graduate Medical Education (ACGME) including practice based learning and improvement, medical knowledge and professionalism.

We envisage a model where PBRNs can be used to enhance psychiatry residents' interest and skills in research and to find answers to clinical questions.

**NO. 66**

**ENGAGING RESIDENTS IN QUALITY IMPROVEMENT: A MODEL OF A RESIDENT-LED, DYNAMIC QUALITY IMPROVEMENT CURRICULUM**

*Lead Author: Karen Bos, M.D., M.P.H.*
*Co-Author(s): Raziya S. Wang, M.D.*

**SUMMARY:**

The Accreditation Council of Graduate Medical Education (ACGME) now emphasizes lifelong learning and quality improvement as important requirements of resident education. However, quality improvement can often be a challenging topic for resident engagement. We present a resident-led, resident-taught initiative to teach quality improvement to psychiatry residents using a dynamic and practical approach. The curricu-

lum was designed for PGYII-IV residents and was implemented in ten class sessions over the academic year. The course was led by a fourth-year resident with support from hospital and residency administration. Goals of the course included 1. resident demonstration of QI knowledge and skills and 2. resident understanding and appreciation of the role of QI in health care delivery and reform. Specific topics emphasized in this curriculum included attributes of successful QI projects, approaches to encouraging critical thinking, and opportunities for self-reflection and self-evaluation. Residents chose a QI topic based on their own interests and worked individually or in small teams to design, implement, and evaluate their project using the Plan-Do-Study-Act (PDSA) model. At the conclusion of the course, residents had the opportunity to present their results in a scholarly forum. This curriculum provides an example of a resident-driven educational approach that incorporates opportunities for self-evaluation, self-reflection, and scholarly activity, while integrating residents as leaders of the QI process in health care settings.

**NO. 67**

**DELUSIONAL INFESTATIONS: A WIDE SPECTRUM OF PRESENTATIONS**

*Lead Author: Mona Malakouti, M.S.*
*Co-Author(s): Mona Malakouti, M.S. Gabrielle Brown M.S., Eric Sorenson A.B., Argentina Leon M.D., Ethan Levin M.D., Eva Wang B.S., John Koo M.D.*

**SUMMARY:**
Background: Delusional infestations (DI) or the false belief that one is infested with living or non-living organisms is a relatively usual encounter in psychodermatology. DI, also known as delusions of parasitosis (DOP), is a type of monosymptomatic hypochondriacal psychosis (MHP) or somatic subtype of delusional disorder. DI may be characterized as a primary or secondary process with cutaneous symptoms such as crawling, biting, or stinging that patients may falsely attribute to the presence of infesting organisms. In our experience, DI presents as a wide spectrum of mild to severe cases, which is dependent on the rigidity of one's belief in the delusion, or delusional rigidity. We will present three cases we consider to be mild, moderate and severe cases of DI.
Case 1: Mild delusion
A 46-year-old female with a history of OCD presented with a "bug infestation" associated with a crawling sensation. The symptoms began 2 years prior when she noticed white bugs on a wall near a poorly maintained plant. The patient's affect was appropriate and our exam did not reveal evidence of insects or scabies. Following a carefully conducted interview, the patient agreed with the provider that she was mistaken on her conviction of a "bug infestation" and no further treatment was necessary.
Case 2: Moderate delusion
A 60-year-old female with a history of previous intranasal cocaine use and hepatitis C presented with a complaint of parasites "flying out of her nose" and crawling on her face. While acknowledging these symptoms are abnormal, she asked whether or not "it was all in her head." She attributed these parasites to her history of hepatitis C and conveyed a strong belief in their presence. She was well appearing, appropriate, and agreeable to therapy with pimozide, which helped her symptoms improve greatly.
Case 3: Severe delusion
A 43-year-old male presented with a neck ulcer present for 2 years. The patient stated, "there is a demon within," which he believes caused the ulcer. He reported the sensation of crawling insects within the wound that was also associated with pruritis. On exam, the patient was appropriate and a 2 x 4 cm ulcerated lesion was noted on his left posterior neck. The patient was referred to surgery for excision due to concern of infection or malignancy. Postoperative follow-up revealed improvement and contraction of the wound.
Discussion: Although DI has been highly reported, the spectrum of the disorder has not been discussed. The disease spectrum of DI is an important determinant for the technique a psychiatrist or dermatologist may employ when managing these patients. In the aforementioned cases, the strategies used and outcomes observed were highly associated with the rigidity of the patient's original delusion. Thus, identifying the strength of a patient's delusion in the setting of DI is extremely helpful in determining the appropriate treatment strategy.

**NO. 68**

**SYNTHETIC CANNABINOID INTOXICATION "K2" AND PSYCHIATRIC MANIFESTATIONS**

*Lead Author: Andrea Bulbena, M.D., M.Sc.*
*Co-Author(s): Norma Ramos Dunn, MD.,Ronnie Gorman Swift, MD*

**SUMMARY:**
Background: The emergence of new "designer drugs" has changed in the epidemiology of substance abuse. The Synthetic Cannabinoids (SC) popularly known as" K2" or "Spice", has become a growing health concern. The most common presenting symptoms are severe agitation often accompanied by aggression, tachycardia, panic attacks and psychosis. The objective of this report is to describe symptoms seen with SC use.
Objectives: Facilitate differential diagnosis for acute psychosis in an ER setting and describe the psychiatric and the physical symptoms seen with SC intoxication
Methods: For the past 6 months, we identified over 50 patients with K2 intoxication presenting in our psychiatric emergency room. Ingestion is based on patients' admission of usage or report by a family member since we do not test for this drug.
Results: All patients presented with severe agitation, disorganized thoughts and assaultive behavior. Most of them were 18-25 year old males who required admission to an inpatient psychiatric unit for stabilization and treatment. SC has similar but much more potent effects compared to natural cannabis. It is a full agonist at the cannabinoid receptor type 1 (CB1) in the brain. It can have severe neurotoxic effects and there are even reports in the literature of death in healthy adolescents and young adults.
Conclusions: K2 intoxication must be considered in the differential diagnosis in patients who present to psychiatric emergency rooms with psychosis, severe agitation or panic attacks even if routine toxicologies are negative. The long-term effect of these new synthetic compounds a unknown and the clinical guidelines for managing symptoms are evolving.

**NO. 69**

**ASSESSING MEDICAL STUDENT AWARENESS OF HEALTHCARE**

**DISPARITIES AND MENTAL HEALTH STRESS IN THE LGBT POPULATION FOR CURRICULUM DEVELOPMENT**

*Lead Author: Rustin D. Carter, B.A.*
*Co-Author(s): Dawnelle Schatte, M.D.*

**SUMMARY:**
Rationale: The Lesbian, Gay, Bisexual, Transgendered (LGBT) population is becoming a more socially acknowledged, acceptable and visible cohort with individual and community-specific questions regarding barriers to care, healthcare disparities, and health status. Although the group in totality has shared, related issues in healthcare, there is also a need to educate future and current clinicians the importance of recognizing the individual experiences that each patient encounters as member of this population. The Association of American Medical Colleges (AAMC) has issued a call for submissions for competency-based educational and assessment resources, as well as best practices, policies, and guidelines that address the health of LGBT individuals; gender nonconforming and/or discordant children and adolescents; and those affected by disorders of sex development (AAMC, 2012). Engaging and educating healthcare providers, including medical students, on these issues is a key area of focus to begin understanding the vast health needs of this population.
Methods: Our project assessed, by computerized pre- and post-survey, second-year pre-clinical students' knowledge, attitudes, and experiences with LGBT people prior to an educational activity on that material. As part of the Behavioral Science curriculum, they had a syllabus/reading material and one-hour panel lecture from members of the LGBT community. Afterwards, they were asked to complete the post-intervention survey, with additional questions to ask about the amount of training they have had at our school as well as what students perceive as curricular needs.
Results/Discussion: Our results indicated a real need to increase LGBT-specific education in our medical school curriculum. Although there was somewhat of an understanding of healthcare disparities and barriers, education was deficient in regards to specific healthcare needs of the population. Many students discussed the focus in medical school education and LGBT healthcare revolved around gay men and the correlation to HIV/STDs, especially in their preclinical years. There was a global lack of focus in lesbian healthcare, transgendered healthcare, adolescent care/coming out, mental health and substance abuse issues, in addition to an overlying theme of apathy from many students in regards to significance and clinical relevance to future practice.
In comments about adding/editing curriculum or thoughts on the project, negative and positive results were offered; responses ranged from morality issues and total lack of support to answers that the project had opened their eyes and a feeling that more education was needed. Out of the project, a Gay-Straight Alliance has been founded with a lunch lecture series dedicated to LGBT healthcare topics. Pre-clinical and clinical classes have begun to be audited to incorporate more LGBT education, with an upcoming presentation to the curriculum committee to present the totality of our findings.

**NO. 70**

**DOSE DEPENDENT CONDUCTION BLOCK WITH LITHIUM IN THERAPEUTIC RANGE**

*Lead Author: Shanel Chandra, M.D.*
*Co-Author(s): Dr.Cheryl Kennedy, M.D.*

**SUMMARY:**
Lithium is one of the oldest psychotropic medications discovered in the year of 1817. It is used as a first line treatment for bipolar disorder and is known for its side effects and toxicity with a narrow therapeutic range (0.6-1.2mEq/L). Cardiac side effects are one of the rarest, which are usually seen with chronic lithium therapy and toxic levels. We present a case of a 49yr old woman, with no significant cardiac history, diagnosed with bipolar disorder started on lithium 6 months ago. She presented to the emergency room with an episode of syncope and her lithium level was measured to be 1.0mEq/L. She was found to have a mobitz type-II block which initially reverted to mobitz type-I after Lithium was stopped and finally reverted to normal sinus rhythm after 3 days. Her other outpatient medications included simvastatin and hydrochlorothiazide. Our case shows that heart blocks can be seen even with normal Lithium levels and should be included in the differential diagnosis of patients on lithium presented with change in mentation. Although larger studies are needed, prior cardiac history or cardiac screening should be included in patients that require lithium therapy.

**NO. 71**

**SLEEP DISTURBANCES AND PERCEIVED STRESS IN ITALIAN PSYCHIATRY RESIDENTS: A CROSS-SECTIONAL STUDY**

*Lead Author: Carmen Concerto, M.D.*
*Co-Author(s): Claudio Conti MD, Maria R. Muscatello MD, Maria S. Signorelli MD PhD, Rocco Zoccali MD , Eugenio Aguglia MD Fortunato Battaglia MD PhD*

**SUMMARY:**
INTRODUCTION/HYPOTHESIS:
Medical residencies are highly demanding and stressful and have been associated with mental and emotional problems. Psychiatry residency has the reputation of being less stressful though to date no studies have attempted to investigate mental well-being in psychiatry residents. In this study we examined perceived stress, sleep disturbances and their association with caffeinated beverages consumption in Italian psychiatry residents.
METHODS:
PGY1-5 psychiatry residents at two university hospitals in southern Italy were asked to complete an anonymous questionnaire. The Pittsburgh Sleep Quality Index (PSQI) and Epworth sleepiness scale were used to determine the sleep quality and the level of daytime sleepiness. In addition, we investigated perceived stress and caffeinated drinks consumption (coffee, tea, soda, energy drinks).
RESULTS:
The response rate to the questionnaire study was 58.3%, 70 residents (M = 34.3%, F =65.7%; mean age = 30.3±4.2 years) . 43.2 % had poor sleep quality (PGY1: 50%, PGY2: 53.8%, PGY3: 50%, PGY4: 43.7%, PGY5: 18.1%) and 15.1 % had abnormal daytime sleepiness (PGY1: 25.7%, PGY2: 18.5%, PGY3: 17.1%, PGY4: 22.8%, PGY5: 15.7%). 64.3% reported significant perceived stress. Higher perceived stress score and coffee consumption were associated with greater likelihood of poor sleep quality while cigarette smoking was a risk factor for daytime sleepiness. Sleep medication use dropped during PGY4 and

PGY5 (p=- 0.04).
DISCUSSION/ CONCLUSIONS:
Psychiatry residents have high prevalence of sleep disturbances. Future longitudinal studies are needed to identify appropriate coping strategies and lifestyle changes needed to minimize the negative impact of the working environment on sleep during psychiatry residency

**NO. 72**
**USING STANDARDIZED PATIENTS TO TEACH AGITATION MANAGEMENT**
*Lead Author: Andrea L. Crowell, M.D.*
*Co-Author(s): Robert O. Cotes, M.D.*

**SUMMARY:**
BACKGROUND: Behavioral agitation is a common clinical problem affecting residents of most specialties. In previous studies, 30% of residents outside of psychiatry, and up to 79% of residents in psychiatry reported having received formal training in managing violent patients, however most felt the training was inadequate. A 1993 APA task force on clinician safety highlighted the use of simulated training exercises to help prepare residents for managing agitated or potentially violent patients. However, there is little published data about the use of such exercises in training programs. Here we report on the introduction of an agitation management course for trainees utilizing observed interactions with standardized patients and facilitated feedback sessions.
METHODS: A three hour agitation management course was provided to two groups of learners: 16 4th year medical students and 13 psychiatric interns. A 30 minute didactic was followed by four experiential scenarios with standardized patients, including delirium, substance abuse, mania, and psychosis. Each learner participated in 1-2 scenarios, while teammates observed by video. Each experiential interaction was also observed by a senior psychiatry resident (for MS-4 learners) or a psychiatry faculty member (for PGY-1 learners) who led a feedback session immediately after each interaction. Thirteen medical students (81.3%) and twelve residents (92%) completed pre- and post-course self-assessments regarding 1) comfort managing agitated patients, 2) knowledge of the causes of agitation, 3) knowledge of verbal and behavioral de-escalation techniques, and 4) knowledge of pharmacological management of agitation. All assessments were rated on a scale from 1 to 7 (1= “poor,” 7 = “excellent”).
RESULTS: Prior to the course, self-ratings for medical students averaged 3.7 in comfort, 4.1 in knowledge of causes, 3.6 in de-escalation, and 3.5 in pharmacology. Post-course assessment scores increased to 5.2, 5.6, 5.5, and 5.0, respectively. Improvement in each area of self-assessment was significant, p≤0.007. Self-ratings for residents averaged 4.2 in comfort, 3.6 in knowledge of causes, 3.5 in de-escalation, and 3.6 in pharmacology. Post-course assessment scores increased to 5.5 in the first three categories, and to 5.2 in pharmacology. Improvement in each area was significant, p≤0.009. The course was rated favorably: 5.7 out of 7. Common themes in anonymous post-course feedback comments included praise for the realism of the simulations and appreciation for immediate feedback.
CONCLUSIONS: Use of simulated patient encounters is an effective way to improve self-assessed knowledge and confidence in managing behavioral agitation in senior medical students and junior residents. Feedback from participants suggests that realistic simulations followed by immediate feedback are key features in the learning experience.

**NO. 73**
**EMERGENCY PSYCHIATRY IN THE NEW WORLD ORDER: RESIDENT EXPERIENCES IN NORTH CAROLINA**
*Lead Author: Nora M. Dennis, M.D., M.P.H.*
*Co-Author(s): Marvin S. Swartz, M.D.*

**SUMMARY:**
Background: Declining government support for community mental health services and state hospital bed reductions in North Carolina have led to marked increases in psychiatric patient volumes and wait times in emergency departments, changing psychiatry trainee experiences.
Aim: To quantify psychiatry resident emergency department experiences in North Carolina, including burnout and resident attitudes towards workload and patient care.
Methods: All psychiatry residents in North Carolina were invited by email to complete an anonymous online survey through Qualtrics, approved by the Duke University Medical Center IRB. Participation was encouraged by the opportunity to participate in a raffle for a prize at the end of the survey. The survey was opened November 6, 2013 and closed December 2, 2013, with two reminder emails sent after the initial invitation. The survey explored resident experiences in emergency psychiatry, attitudes towards patient care, burnout, attitudes towards mental health policy, and future career plans.
Results: Of one-hundred and seventy-seven psychiatry trainees in North Carolina, ninety-one (51.4%) completed the survey. Of these, 91% (n=84) had completed at least one emergency psychiatry rotation. Eighty-one percent of residents (n=68) rated finding patient dispositions from the emergency department as somewhat or very difficult. Sixty-eight percent of residents (n=57) were discouraged by patient length of stay in the emergency department at least once per shift. Only 22% (n=20) of residents rated the care that they provided in the emergency department as “very good” or “excellent”. Although only 46% of residents reported feeling “very safe” or “extremely safe” when working in the emergency departments, only 8.8% (n=8) of respondents report having been assaulted by a patient. Feelings of burnout were prevalent among respondents. Sixty percent of residents (n=50) agreed that “I feel burned out from my work” every few shifts or more frequently. Forty-nine percent of respondent (n=41) agreed with the statement “I feel more callous towards people” at least every few shifts.
Conclusion: This research suggests that discouragement with patient length of stay and difficulty in finding disposition for patients are significant issues for residents working in the emergency department. A high proportion of residents do not feel that they are providing high quality care to emergency department patients. Feelings of burnout are prevalent in this population, and preventive interventions are indicated.¬¬

**NO. 74**
**RESIDENTS AS TEACHERS (RAT): MEDICAL STUDENTS’ EVALUATION OF PSYCHIATRY RESIDENTS’ TEACHING BEFORE AND AFTER A RAT IMPROVEMENT PROGRAM**
*Lead Author: Vijayabharathi Ekambaram, M.D., M.P.H.*
*Co-Author(s): Michael Brand, Ph.D., Ruchi Aggarwal, M.D.*

**SUMMARY:**
Background:
Third year medical students evaluated residents classroom teaching before beginning an educational program to improve residents' teaching skills and then at mid point in the program.
Purpose:
Medical students' evaluation of residents' teaching skills and attitudes are a key indicator of improved resident teaching. Medical students evaluated residents teaching skills and attitude before and at the mid point of a program to improve residents' teaching in order to assess the RAT program.
Methods:
A baseline student evaluation of residents teaching skills and attitude was conducted in 2010 among third year medical students (n=32). After the initial assessment, residents participated in an initial four hour RAT workshop (2010 and 2011), residents also participate in a 6 session educational seminars on community education (2011) and a six session seminar on instructional methods (2012). To determine the effectiveness of the RAT program and to assess the residents' teaching skills , a follow up student evaluation was conducted in 2012 among third year medical students(n=130). T tests and chi-square analysis were used to determine if there is any significant difference in resident teaching performances.
Results:
A significant improvement was identified in resident's attitude towards teaching before (67.7%) and after (87.7%) the RAT program. Students evaluated residents as more enthusiastic about teaching them ($p<0.01$). Although there are no significant differences in teaching skills, the overall mean score of residents teaching performance assessed by students showed improvement before and after the RAT workshops ($p<0.05$).
Conclusion:
-Medical students' evaluation clearly depicts the importance of RAT programs.
-Teaching residents educational design and methods may require more focused education and ongoing supervision.
-Residents' attitudes toward teaching impacts medical students learning.

**NO. 75**

**PROPOSAL FOR A MEDICAL STUDENT PSYCHIATRY CLERKSHIP EXPANDED EXPERIENCE AS A TOOL FOR RECRUITMENT AND EDUCATION**

*Lead Author: Kristin V. Escamilla, M.D.*

**SUMMARY:**
Introduction/Background:
It is well known that stigma against the psychiatric profession amongst other medical specialists and against the mentally ill population occurs. Additionally, successful recruitment of medical students by psychiatry residency programs is a continued goal.
Research Objectives:
The objectives of this study are to increase interest in psychiatry as a profession and facilitate in recruitment, to decrease stigma against those with mental illness and mental health workers, and increase awareness of community resources and comfort in treating the mentally ill via implementation of a new educational experience for medical students.
Methods:
This intervention will be implemented at the UT Southwestern Psychiatry Residency Program in Austin, Texas with visiting medical students from the UTMB Medical School. During their psychiatry clerkship rotations, studentswill be introduced to non-traditional psychiatric settings (private outpatient clinic, university mental health clinic, partial hospitalization programs, and jail mental health) once a week in addition to their traditional clinical settings (inpatient hospital and consult/liaison service).
Objectives will be assessed by pre and post surveys with one rotation without the intervention serving as the control. A feedback survey will also be provided to look for areas of improvement in this new curricular experience.
Results: Results are pending upon completion of this study and will be available in May for the 2014 APA conference.
Conclusions and Implications: This study will show whether or not an intervention such as this one affects medical student attitudes towards psychiatry as a profession, mental illness, and community resources for those who are mentally ill. It will also allow programs who are interested in spending the time and resources in implementing a program such as this, know if their efforts will likely be effective or not towards achieving the above objectives. Therefore the study of such an educational intervention will be helpful for many institutions in guiding future medical student curricular changes and in improving the outlook of careers in psychiatry.

**NO. 76**

**BREAKING TRADITION: COMPARING STUDENT SATISFACTION WITH A NOVEL VERSUS MORE TRADITIONAL PSYCHIATRY CLERKSHIP EXPERIENCE**

*Lead Author: Scott B. Falkowitz, B.S., D.O.*
*Co-Author(s): Jerry D. Chang, M.D.*

**SUMMARY:**
The psychiatry clerkship is not only a fundamental element of medical student education, but a significant determinant in the career choices of future physicians. The psychiatry clerkship at our hospital has traditionally been structured around inpatient care, which is limiting in the breadth of psychiatric sub-specialties that students are exposed to. However, it allows for a deeper experience, where students can more readily become a part of the treatment team. The opening of the Hofstra School of Medicine has prompted the development of a new, broader curriculum for their psychiatry clerkship, which includes clinical experiences in the inpatient setting as well as in addiction, child and adolescent, emergency, consultation-liaison, and geriatric psychiatry. Students participating in both the novel clerkship experience as well as students in the traditional clerkship were asked to complete a voluntary 10-item online survey at the end of their rotation, which examines the students' satisfaction with the rotation as well as the effect that it may have on their perceptions of the field of psychiatry generally and as a career choice. The aim of this presentation is to comparatively examine student satisfaction and general attitudes between a novel clerkship design and a more traditional approach, and help to answer the question of breadth versus depth in a clinical clerkship. It is expected that an enriched psychiatric curriculum will contribute to greater medical student satisfaction and a more

positive attitude towards psychiatry as a specialty and a possible career choice. There is an expectation that the poster will provide the audience with insight into the comparative benefits of a traditional versus novel clerkship design in psychiatry, as well as provide them with the framework for implementing such a program at their own sites.

**NO. 77**
**CIVIL COMMITMENT: CLINICAL PRACTICES OF PSYCHIATRY RESIDENTS**
*Lead Author: Aqeel Hashmi, M.B.B.S.*
*Co-Author(s): Monica Grover, M.D.*

**SUMMARY:**
Objective: To study psychiatry residents consistency between legal and clinical documentation in patients admitted involuntarily to a County Psychiatric Hospital in Texas.
Method: At a specific time point the first 89 involuntarily hospitalized patients at Harris County Psychiatric Center were selected. We obtained all relevant documentation completed by residents and faculty from retrospective review of electronic medical records.
Results: A high percentage of patients lacked clinical justification of criteria for involuntary admission to hospital. There appears to be a higher rate of inconsistency for psychiatry residents as compared to trained faculty psychiatrists.
Conclusions: There is a need for more structured training for psychiatry residents with regards to practice involving civil commitment.

**NO. 78**
**THE MODIFICATION AND EVALUATION OF A CURRICULUM TO ADDRESS TRAUMA FOR PSYCHIATRY RESIDENTS**
*Lead Author: Noor Jarun, D.O.*
*Co-Author(s): Sophia Banu, M.D.,John H. Coverdale, M.D., M.Ed., FRANZCP, Bengi Melton, M.D., M. Renee Valdez, M.D.*

**SUMMARY:**
Objective: Develop and provide a trauma course for PGY III psychiatry residents that address the following knowledge and skill areas: definition and prevalence of traumatic exposures, diagnostic criteria for PTSD, PTSD sequelae, PTSD treatment and referral options, morbidity/consequences of PTSD, obstacles/keys to successful screening for traumatic exposures, delineation of appropriate questions for trauma screening, identification/practicing of skills related to trauma screening and to improve follow up for patients with history of trauma.
Methods: PGY III residents perform a pre-course survey to assess the attitudes, comfort and knowledge in screening for trauma exposure. The 12 week course is offered as part of the resident's didactic scheduling. The classes include information on a wide variety of types of trauma including natural disasters, childhood trauma, refugee trauma, survivors of torture, intimate partner violence and military sexual trauma. The course also offers techniques in therapy using transference and countertransference along with role playing activities with the resident participants.

**NO. 79**
**ACGME-REQUIRED ANNUAL SCHOLARLY OUTPUT BY CURRENT U.S. PSYCHIATRY PROGRAM DIRECTORS: HOW MUCH IS ENOUGH?**
*Lead Author: Nathan S. Johnston, D.O.*
*Co-Author(s): Azalia V. Martinez, M.D., Jason E. Schillerstrom, M.D.*

**SUMMARY:**
Introduction:
The Accreditation Council of Graduate Medical Education (ACGME) has placed renewed emphasis on scholarly output by the faculty of all residency training programs, including psychiatry. One specific metric used to measure scholarly productivity that must be submitted to ACGME annually is the number of PubMed indexed publications each member of the core faculty has published in the academic year. However, there is no clear benchmark for publications of the core faculty, including the program director. The purpose of this study was to quantify the number of PubMed indexed publications published by general adult, child and adolescent, and geriatric psychiatry program directors during a five year period, the timeframe ACGME requests be updated annually.
Methods:
The names of general adult, child and adolescent, and geriatric psychiatry program directors were obtained from the ACGME website. Program director names were entered into a PubMed search and the number of published works from July 2008 – June 2013 was counted and reconciled by two blinded reviewers. The median number of publications per group was calculated and compared using nonparametric analyses.
Results:
The median number of publications was 1 (range 0-93) for adult psychiatry program directors (n=184), 1 (range 0-27) for child and adolescent psychiatry directors (n=121), and 3 (range 0-66) for geriatric psychiatry directors (n=58). Geriatric psychiatry program directors had significantly more publications than general adult program directors (Z=2.192, p=0.03) and child and adolescent directors (Z=1.995, p=0.046). Among adult program directors, the median number of publications did not differ by geographic region but did positively correlate with the number of residents in the program (Spearman's rho=0.29, $p<0.001$).
Conclusions:
The number of PubMed indexed publications for program directors of general adult, child and adolescent, and geriatric psychiatry residencies over the past 5 academic years is exceedingly low. Geriatric psychiatry program directors appear to have a greater number of annual publications than their general adult and child and adolescent program counterparts. Program directors of smaller program sizes appear to have greater difficulty with their annual scholarly output when compared to those of larger program sizes. Further research is needed to identify and examine the challenges facing psychiatry program directors that may be limiting their ability to participate in annual scholarly activities such as research publications.

**NO. 80**
**INTERNET GAMING DISORDER: CASE REPORT AND REVIEW OF THE LITERATURE**
*Lead Author: Amanjot A. Kaur, M.B.B.S.*
Co-Author(s): Vishal Madaan, M.D.

**SUMMARY:**

Internet gaming disorder (IGD) has been included under conditions for further study in DSM-5. It has been described as persistent and recurrent use of the internet to engage in games leading to clinically significant impairment. Given lack of universally accepted diagnostic criteria in the past, the overall prevalence of this condition hasn't been accurately quantified. DSM-5 proposes nine diagnostic criteria, of which five have to be met to qualify for a diagnosis of IGD.

We describe the case of a 14y/o male with a pre-existing diagnosis of anxiety disorder NOS, who was seen in the emergency department after his parents pursued an emergency custody order. He was physically aggressive, destructive and had made suicidal and homicidal statements after his parents took away his internet access. He was involved in a massively multiplayer online role playing game (MMORPG), which had no formal ending, and which involved a very large group of players interacting virtually with one another. He had always been preoccupied with online gaming, barely eating or sleeping, while playing the game. He had also become socially withdrawn, lacking interest in other age-appropriate activities, and his grades had been consistently deteriorating, since he got actively involved in this game. His parents unsuccessfully tried to control his gaming by denying him internet privileges and ongoing psychotherapy was not productive as well. When not allowed to play the game, he would exhibit anger outbursts, anxiety, irritability, disruptive behavior, along with suicidal and homicidal ideation, and would incessantly pursue ways to get his internet access back. He was hospitalized for safety assessment and continues to undergo outpatient follow up after discharge.

Internet gaming addiction is becoming a growing mental health concern around the world. With emphasis on virtual social networking, and easier access to smartphones, games such as MMORPGs require substantial time commitment that can be detrimental to the social, occupational and personal development of youth. Research indicates that such individuals may perceive their virtual lives as more gratifying as they portray themselves as more proficient than in their real lives. While the psychopathology is unclear, research suggests that prenatal androgen exposure, poor executive functioning skills, lower social competence and impulsivity may be potential risk factors. Furthermore, males with autism spectrum disorder and ADHD are believed to be at a greater risk for developing problematic video game use. In addition, the gamers tend to have more severe depressive, anxiety, social phobic, somatic and pain symptoms along with reduced decision making ability. Physiological arousal deficits have also been observed in gamers; in fact, there is growing evidence that cravings may also induced by game cue pictures. Family therapy, cognitive behavioral therapy and use of bupropion have been proposed as potential treatment measures.

**NO. 81**

**DO MEDICAL STUDENT STRESS, HEALTH, OR QUALITY OF LIFE PREDICT STEP 1 SCORE? A COMPARISON OF STUDENTS IN TRADITIONAL AND REVISED PRE-CLINICAL CURRICULA**

*Lead Author: Andrey K. Khalafian, M.D.*
*Co-Author(s): Megan Arvidson, MS IV at OUHSC, Ugur Sener, MSIV at OUHSC, Irina Baranskaya, M.D., PGY-4 at OUHSC, Sarosh Nizami PGY-2 at University of Maryland/Sheppard Pratt, Phebe Tucker, M.D., Professor and Arnold and Bess Ungerman Endowed Chair in Psychiatry, Vice Chair of Education*

**SUMMARY:**

Introduction/Hypothesis: To assess whether a revised medical school curriculum would result in decreased stress, a better quality of life, and improved general well-being in medical students, and be linked with improved performances on a standardized knowledge examination (USMLE Step 1), compared to students from a traditional medical school curriculum.

Methods: We conducted a two-year assessment of two groups of sophomore medical students, the last class with a traditional, discipline-based curriculum and the first class of a revised, systems-based curriculum. We measured and compared student-reported quality of life, group cohesion, stress levels, as well as self reported physical and mental health in the two groups. The sample size consisted of 58 students (34.3% of class) from the class of 2013 traditional curriculum and 50 students (32.7% of class) from the class of 2014 revised curriculum. Groups were demographically similar. Wilcoxon rank sum tests and Spearman rank correlations analyzed data, significant at $p<0.05$.

Results: Contrary to the hypotheses the medical students from the revised curriculum had more depression symptoms, higher levels of perceived stress, lower self-assessed physical health, lower morale, as well as decreased hours of sleep per night than those from the traditional curriculum. Furthermore, with the exception of morale, none of the other subjective measures had a correlation with performances on USMLE Step 1. Surprisingly feelings of morale correlated negatively with Step 1 scores.

Discussion/Conclusion: The revised curriculum students reported worse subjective measures of overall well being, levels of stress, and quality of life compared to the students from the traditional curriculum. However, few of these measures had an association with performances on Step 1. The different curricula also did not appear to have an effect on students' Step 1 performance. It would be beneficial to have a follow up assessment after the revised curriculum is better established, to determine if curriculum-related stress and sense of well-being improve and predict performance on Step 1 and other objective measures of academic performance.

**NO. 82**

**CIVIL COMMITMENT 101: DEVELOPMENT OF A COMPETENCY-BASED CURRICULUM FOR PSYCHIATRY RESIDENTS**

*Lead Author: Darrow Khosh-Chashm, M.D.*
*Co-Author(s): Aqeel Hashmi, MD., Monica Grover M.D.*

**SUMMARY:**

Introduction: During training, psychiatry residents are routinely involved in assessing patients who undergo involuntary detention for mental health treatment. Research shows that limited knowledge of statutory criteria for commitment impacts on residents' decision making when detaining patients involuntarily. Junior psychiatry residents are less likely to take risks when discharging involuntary patients. To the authors knowledge there is a lack of literature on teaching in this particular area of practice. In an anonymous electronic survey, half of the psychiatry residents at the University of Texas Health Sciences Center in Houston reported that they had not received any training on statutory criteria for civil commitment; more than half felt their training was inadequate; and a majority agreed

they would benefit from formal training. ACGME recommends that residents be exposed to the legal aspects of psychiatric practice including civil commitment. According to the ACGME outcome project, residency programs should have a curriculum with dependable measures to assess resident performance. A competency based curriculum was developed to train residents on civil commitment procedures. The focus was to implement measurable training experiences involving workplace based assessments; whilst encompassing the competency domain of professionalism and to clarify level of expertise. Methods: Training will be delivered via an electronic learning module including historical aspects, ethical issues, landmark cases, statutory criteria and timelines, the mental health code, simulated case based discussion, writing skills exercises, and a patient experience video. Residents will gain field experience by attending mental health hearings in court. An Assessment of Clinical Expertise (ACE) in performing an assessment for involuntary detention and giving evidence in a Mental Health Hearing will be conducted alongside audits of legal and clinical documentation. Discussion: The curriculum proposed in this pilot curriculum addresses the needs of psychiatry residents in the state of Texas. In the future it may be expanded and applied to psychiatry residents on a national level. Outcomes: The authors will report their experience of this pilot competency based curriculum. Pretest and post-test questionnaires will be designed to measure residents' knowledge. Key words: Civil Commitment, Involuntary Detention, Medication Petitions

**NO. 83**

**A CASE OF USHER'S SYNDROME WITH PSYCHOSIS**

*Lead Author: Swapnil Khurana, M.D.*
*Co-Author(s): Ernesto Figueroa M.D.*

**SUMMARY:**

Introduction: Usher's syndrome is a rare autosomal recessive disorder characterized by congenital hearing impairment, progressive visual loss and sometimes vestibular dysfunction. Few case reports have described an association between Usher syndrome and psychotic features. Auditory hallucinations have been suspected to be present in a few cases, in spite of the deafness. Here we report a case of Usher's syndrome with delusions and auditory hallucinations.
This is a 47 year old deaf and partially blind female, who presented with severe depression, auditory hallucinations commanding her to kill herself and unusual delusions about wolf-like animals inhabiting her mind and body. They were attacking her and devouring her brain whenever they were upset. These experiences were so distressing that she would become acutely suicidal, at times requiring hospitalization.
The patient responded to a combination treatment of supportive therapy, pharmacological therapy (lurasidone) and maybe most importantly to an empathetic questioning of her symptoms that allowed her to begin to see these symptoms as a response to some very difficult and stressful situations as well as trauma.
Conclusion: This case serves to increase clinical awareness about patients with Usher's syndrome presenting with psychotic features. Psychiatric management of visual and hearing impaired patients is admittedly challenging. There are only few case reports in psychiatric literature on relationship of Usher's syndrome and psychosis. So far no treatment is known for the syndrome. Genetic counseling of parents, leading to early recognition, may be helpful.

**NO. 84**

**A RANDOMIZED CONTROLLED STUDY USING VIRTUAL PATIENTS TO ENHANCE MEDICAL STUDENTS' EMPATHIC COMMUNICATION**

*Lead Author: Thomas Kim, B.S.*
*Co-Author(s): James Murphy, M.D., Neelam Chaudhary, B.S., Michael Borish, B.S., Andrew Cordar, B.S., Jennifer Waller, Ph.D., Benjamin Lok, Ph.D., Adriana Foster, M.D.*

**SUMMARY:**

Introduction: Empathy is the ability to identify and visualize another person's experiences, feelings, and perspectives. Our project proposes a method of employing virtual-patients (VPs), computerized representation of real-life patients, to enhance students' empathic communication skills.
Methods: In a randomized controlled prospective study, 70 first-year medical students from the Medical College of Georgia interacted with a VP with depression and subsequently received empathy feedback (Intervention group) vs. a VP without empathy feedback (Control group). The students used a web-browser to have a 15 minute natural language interaction (using a chat-based interface) with a VP. Both groups then interacted with a Standardized Patient (SP) with depression to assess differences in empathic response between the two groups.
Results: Complete results are available from 32 students in each group. Empathic responses by the students were coded with the Empathic Communication Coding System; Chi-square, t-tests or one-way ANOVA were used to examine differences in variables between groups. Prior to intervention with empathy feedback, there was no statistically significant difference between student demographics, mental health experience, gender or ethnicity. With empathic feedback, students in the intervention group elicited 12.35 empathic opportunities/SP interaction, compared to 8.58 opportunities in the control group ($p = 0.0005$). The intervention group, after empathic feedback, had higher mean empathy response score in the interaction with an SP with depression (Intervention = 2.87, Control = 2.26; $p = 0.02$). Additionally, communication checklists filled out by SPs at the end of the interactions showed that students in the intervention group were perceived to be significantly more empathic: offering encouraging, supportive, and empathetic statements ($p < 0.0001$), appearing warm and caring ($p = 0.0157$), and establishing good rapport ($p = 0.0048$).
Conclusions: A VP intervention can increase students' empathic response in SP interactions. Our goal is to eventually disseminate the VP as an online tool for teaching empathy to medical students prior to their clinical years.

**NO. 85**

**TEACHING NEUROSCIENCES! BUT HOW?**

*Lead Author: Venkata B. Kolli, M.B.B.S.*
*Co-Author(s): Mojgan Amani, M.D., Anureet Walia, M.B.B.S., Ashish Sharma, M.D.*

**SUMMARY:**

Learning objectives
At the end of the presentation participants will understand

1. Psychiatric trainee's perception on the best approach at teaching neurosciences
2. Our experience at developing e-learning modules to address neuroscience knowledge deficits

Background:
Advances in neurosciences and genomics have revolutionized the understanding of several psychiatric illnesses. This expansion of knowledge has practical implications of reducing the stigma around illnesses by explaining the biological mechanisms. They also help aid plan best treatments and predict the prognosis of several conditions, making it imperative that psychiatry trainees are well versed with these latest developments. Survey's of Psychiatry Program directors published in 2006 and 2012 recognize the importance of neuroscience education. However, the best methods of imparting this knowledge are not clear. An impediment to knowing about these changes is the perception that knowledge of these new developments does not impact direct patient care.

Aims and Method
We developed a survey questionnaire to identify psychiatric trainee's perception on the best approach at teaching neurosciences. We distributed this paper-based survey once to all residents and fellows at the Creighton Nebraska Psychiatry Training Program.

Results
24 out of 34 trainees responded with a survey response of 70%. Around 95% of trainees rated their interest in neurosciences to range from moderate to high. Most common motivators for learning neurosciences reported in this survey were that, this knowledge would help plan better treatments followed by utility in discussing this knowledge with patients. 58% felt neurosciences should be taught in the first year of psychiatric residency. Trainees used a variety of strategies like reading journal articles, attending conferences and self study to keep abreast with this evolving field. Respondents rated their understanding of epigenetics to be the lowest and knowledge of neurobiology of disorders to be the highest. Didactics on neurosciences, solving multiple-choice questions and e-learning approaches were the next best-preferred methods. We are currently developing multiple choice question based e-learning modules, and we wish to share our experience during this poster presentation.

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**NO. 86**

**ROLE OF ANTIPSYCHOTICS AND MOOD STABILIZERS DURING AN ACUTE EPISODE IN AN INPATIENT FACILITY OF BIPOLAR MANIC OR MIXED STATES: A RETROSPECTIVE STUDY**

*Lead Author: Siva Sundeep Koppolu, M.B.B.S.*
*Co-Author(s): M Szklarska-Imiolek, B Vaughan, F Linares, L Cohen, I Galynker*

**SUMMARY:**

Introduction:
Bipolar illness is a disorder of mood and arousal. During the acute episodes of manic or mixed states, the usage of mood stabilizers and antipsychotics are been used either as a mono therapy or as a combination of both. The extent to which real-life practice conforms to this recommendation is unclear. In this context we assessed the response to antipsychotics, and mood stabilizers in manic or mixed patients admitted to inpatient psychiatric units in a real life hospital setting.
Method:
Interim data analysis from an ongoing retrospective chart review study was done. Patients were selected based on the following criteria: ages 18-65, discharged from an Inpatient Psychiatric facility after being hospitalized for acute mania, for a minimum of 2 weeks, and diagnosed with Bipolar disorder, manic or mixed episode. Two clinical scales, Clinician Administered Rating Scale for Mania (CARS-M) and Clinical Global Impressions for Illness Severity (CGI-S, CGI-I), were used to rate the severity of illness. The charts were rated by 3 raters and least difference criteria were used to achieve a consensus score for each item on the two scales. In addition to the illness severity information, other clinical markers (medications prescribed, p.r.n requirement, seclusions and drug abuse history) as well as demographic data were extracted.
Results:
Patient who had received mood stabilizers haven't showed any kind of statistical significance when it comes to the improvement of the patient's manic symptoms, psychotic symptoms or the rate of recovery from the manic or the mixed episode (p=0.063). But patients who received antipsychotics compared to those who were not on antipsychotics, had statistically significant change in CARS-M scores from admission to discharge (p= 0.04). In contrast, the patients on antipsychotics responded faster to treatment than those who were not (p=0.034).
Discussion:
Based on retrospective chart reviews of inpatients admitted with acute mania using the CARS-M scale, it appears that patients admitted on MSs haven't showed any difference in their manic symptoms or psychotic symptoms or the rate of recovery from those on antipsychotics. This finding would be consistent with clinicians' practice of using FGAs to treat more severely ill patients.

**NO. 87**

**STRUCTURED CLINICAL ASSESSMENT OF SUICIDE RISK IN PATIENTS WITH CHRONIC PAIN**

*Lead Author: Srinagesh Mannekote Thippaiah, D.P.M., M.B.B.S., M.D.*
*Co-Author(s): Soumya Nagaraja, M.D., Carolina Retamero, M.D., Leonard Kamen, D.O., Guillermo Otero-Perez, M.D., Ananda K. Pandurangi, M.D.*

**SUMMARY:**

Title:Structured Clinical Assessment of Suicide Risk in Patients with Chronic Pain
Objectives:This presentation focuses on,(1)review of structured clinical assessment of suicide risk in chronic pain patients, (2)factors that contribute to increasing the risk of suicide in

chronic pain,and(3)development of a staging method for suicide risk in different phases of suicidal behavior in patients with chronic pain.
Introduction:The risk of suicide in patients with chronic pain has been increasing. In addition, since the emergence of the opioid epidemic in the United States, the number of ER visits and completed suicide in this group over the last decade has shown a sharp upward trend. The authors considered whether a stage-wise assessment of suicide in chronic pain patients might result in better assessment and recognition of suicide risk as well as targeted management for this high-risk patient group.
Methods:EMedline, EMBASE, CINHAL, PsycINFO and the Cochrane Library electronic databases were searched for articles published English from 1974 to 2013 by using the following key words:"suicide","suicide attempt","suicide ideation", "non-suicidal self injury", "self-injury" paired with"chronic non-cancer pain", "chronic pain","pain", and the results filtered with combination of the pair with "assessment", "risk assessment", and "suicide assessment". 193 unduplicated articles were identified. After review of the abstracts of these articles, 15 were found suitable for full review and consisted of objective clinical trials focused on risk factors of suicide in patients with chronic pain.
Results:Several multi-dimensional factors appear to increase risk of suicide in chronic pain patients. These risk factors may be classified into psychiatric and non-psychiatric factors. Some of the factors are quite inherent to the patient with chronic pain, for example pain catastrophizing, escape from pain, avoidance of pain. Our group then created a stage wise assessment of suicidal risk in patients with chronic pain to help the clinicians identify high risk patients and to implement the concepts of prevention and post-prevention of suicide in the clinical practice.The 5 stages are: Stage I: Prevention, Stage II:Pre-attempt, Stage III:Suicidal attempt, Stage IV:Post-suicidal attempt, and Stage V: Recovery.
Conclusion:Suicide behavior, especially in chronic pain patients is a dynamic and complex phenomenon, and our ability to predict the likelihood of a fatal outcome in any given patient is poor. However, physicians should have a good understanding of the common bio-psycho-social needs of individuals with chronic pain, which can help to target the areas needing help. We do caution that while such identification and intervention would help recognize and assist vulnerable patients it will not necessarily predict the outcome, accurately. However, structured assessment and targeted interventions can improve identification and treatment of high-risk individu

**NO. 88**

**FORMING A REACTION: THE DEVELOPMENT OF A RESIDENCY TRAINING RESPONSE PROGRAM TO ASSAULT OF PSYCHIATRY RESIDENTS**

*Lead Author: Christopher P. Marett, M.D., M.P.H.*
*Co-Author(s): Brian E. Evans, DO*

**SUMMARY:**

Practicing psychiatry is a rewarding but also high-risk profession. Training in psychiatry is especially dangerous, with the prevalence of physical assault found to be between 25%-64% among residents. Additionally, the quality of violence prediction by residents is relatively low, and residents are often placed in situations where there may be increased vulnerability to violent attacks and little direct support. Residents who are assaulted frequently express feelings of self-blame, and are prone to lasting medical and psychiatric sequelae. When reporting and response policies are unclear, trainees' likelihood of reporting predictably diminishes, thus limiting response to and knowledge of such incidents.
The prediction and prevention of patient assaults is vastly studied in the literature, and there is a subset of this literature that addresses prevention of assaults against residents. In addition, there have been several papers published over the last four decades that detail both overall estimated prevalence as well as specific incidents of assault against psychiatry residents, some of which propose specific responses. Unfortunately, there is a relative dearth of literature providing a blueprint for integrated, structured response protocols enacted following resident assaults.
In developing a novel systematic response to resident assaults, we propose the mnemonic "REACTION" as a guideline for the development of such post-vention protocols. This mnemonic is based on a thorough review of recommended and tested strategies in the literature, as well as what has been implemented at our program. The mnemonic stands for 1) Report, 2) Emergent Medical Care, 3) Assess the physical environment, 4) Consider pressing Charges, 5) establish an assault response Team and seek further Treatment, 6) hold an Interdisciplinary briefing, 7) On-call doctor backup plan, and 8) review Near-misses. It will be used to illustrate how similar protocols may be tailored to the needs of other training programs. We will also consider specific examples of resident assault within our program, occurring prior to the implementation of this program, to highlight both the sequelae of such assaults as well as the need to have a response system in place. This poster will further enumerate the specific system enacted, through this research, within the University of Cincinnati psychiatry residency training program.

**NO. 89**

**CULTURAL BAGGAGE: A CASE SERIES ANALYZING THE IMPACT OF GROWING IMMIGRATION ON PSYCHIATRIC DIAGNOSIS AND TREATMENT IN AMERICA**

*Lead Author: Mona Masood, D.O.*
*Co-Author(s): William Dubin, M.D., Kiran Majeed, M.D.*

**SUMMARY:**

With approximately 1.8 million people immigrating to the United States yearly, the importance of culture in influencing psychiatric diagnosis cannot be overlooked. The migrant can experience multiple stressors that might impact their mental health such as lack of understanding of cultural norms, loss of cultural identity, unclear socioeconomic status, and displaced support systems. Thus, it becomes imperative on psychiatrists to integrate cultural competency of these factors when formulating diagnoses and treatment plans in these populations.
A literature review of cultural psychiatry was conducted on PubMed in relation to three cases of recent immigrants to the United States admitted to the acute inpatient psychiatric unit suffering from adjustment disorder with predominant features of anxiety and depression in direct correlation to cultural stressors mentioned earlier.
It was concluded from these cases and literature reviews that

there is a clear dilemma in the current generalized formation of the DSM and ICD criteria in diagnosing psychiatric disorders in the face of ever growing immigration and consequent introduction of various cultural ideologies and practices. Cultural psychiatrists have identified the need to thoroughly address not only the familiar diagnostic criteria of mental illness, but also put it in the context of "pertinent cultural variables, family data, and strengths and weaknesses of individuals and their community of origin." It may be through this more comprehensive analysis psychiatrists will be able to achieve optimal patient care in this increasing ethnically and racially diverse society.

**NO. 90**

**EFFECTS OF EARLY CLINICAL EXPOSURE TO COMMUNITY PSYCHIATRY FOR FIRST- AND SECOND-YEAR MEDICAL STUDENTS**

*Lead Author: Anuja S. Mehta, M.D.*
*Co-Author(s): Robert N. Averbuch, M.D., Jacqueline A. Hobbs, M.D., Ph.D., Anuja S. Mehta, M.D., Mariam Rahmani, M.D.*

**SUMMARY:**
An estimated 26.2 percent of adult Americans suffer from a diagnosable mental disorder in a given year. Given the unmet need for psychiatrists to treat this patient population, a disproportionately low number of medical students choose Psychiatry as a specialty. The residency match data show that in 2013, only 1,330 matches were made in Psychiatry (categorical), which is about 5% of all PGY-1 positions available. Approximately half of the Psychiatry PGY-1 positions were filled by US graduates, with the other half being filled by international medical graduates. Several factors contribute to low recruitment of US medical students into Psychiatry as a career, the most notable being stigma surrounding mental illness and the profession of Psychiatry. We hypothesize that one way to increase the recruitment of US medical students into Psychiatry may be to expose them actively to this field earlier in their education.
This study aims to expose first- and second-year medical students at our institution to a clinical Psychiatry experience through the Helping Hands Clinic, a faculty- and resident-run community mental health clinic for the homeless. Interested medical students will be given an opportunity to volunteer at this clinic, allowing them to participate in the psychiatric care of the local indigent population. We will administer the Attitudes Toward Psychiatry-30, (ATP-30)-a Likert-type scale with 30 items developed in 1982 to measure medical students' attitudes towards Psychiatry-to the students before the clinical exposure. After two volunteer experiences, the ATP-30 questionnaire will be repeated, to assess for any changes in their perceptions toward Psychiatry as a profession. Additionally, this experience will promote the Association of American Medical Colleges' (AAMC) recommendation that medical students be able to identify psychiatric illness and elicit psychiatric history from patients including the psychological consequences of their medical illnesses, as part of their pre-clerkship clinical skills set. We predict that early clinical Community Psychiatry exposure will also enhance students' third-year Psychiatry clerkship experience, and potentially increase their recruitment into the field of Psychiatry.

**NO. 91**

**IMPROVING COMPLIANCE IN PSYCHIATRIC PATIENT HANDOVERS: A RESIDENT-BASED QUALITY IMPROVEMENT PROJECT UTILIZING A NOVEL TOOL**

*Lead Author: Dmitry Meyerovich, M.D.*
*Co-Author(s): Cord D. Huston, M.D., Angela K. Mayorga, M.D., Isadore S. Tarantino*

**SUMMARY:**
Background: The resident shift hand-off tool is a critical component of ensuring high quality, safe, effective, and efficient patient-centered care. It is the forum that allows for incoming on-call residents and attending's to be caught up on current patient status, changes made in regimen that day, response to changes, items pending to be completed, and suggested/specifically desired treatment modalities for forecasted issues.
Methods: Development of a tool was undertaken to assist resident physicians in improving their shift handovers, with the intent that the tool would be a checklist for them. The tool was utilized in a psychiatric inpatient setting at Kansas University Medical Center and the Kansas City Veterans Administration (KCVA). The tool addresses accountability by being specific for the person filling the tool out and also by documenting from whom they receive shift hand over. It has a basic checklist flow to ensure that shift handover is received, that the electronic record of the shift hand off at each facility is complete, and that the resident has updated the electronic shift hand off prior to leaving their shift. It also ensures that handoff between locations was completed to the receiving resident doing cross coverage. Finally the tool tracks some basic call stats for future evaluation. To evaluate the quality of shift handovers, meetings with the Chief Resident occurred monthly whereby feedback was given. If discrepancies or issues were found, reeducation and a follow up evaluation to ensure that feedback has been incorporated into the handovers would occur in addition to the monthly evaluation.
Results & Conclusions: The first month of use of the hand-off tool demonstrated a profound increase in compliance to providing shift handoffs from essentially 5% to 99% at the KCVA with slightly less success cross handovers between locations improving from 5% to 80% compliance. Reasons for noncompliance included residents stating: "they forgot" or got "too busy". Lacking proper senior supervision may have played a part. For the month of August reinforcement of the concept was provided to residents weekly through resident meetings and monthly 1 on 1 discussion with new residents to the service. Subsequent improvement was noted from KCVA and KU in the month of August. The shift handover improvement project resulted in increased education and awareness of the importance of shift handovers. With increased training and a tool to track accountability, significant progress was made in establishing compliance with shift handovers. Evaluative processes have been added to increase the shift handovers and enhance the resident physicians abilities to provide thorough and efficient handovers. In the future, continued reinforcement with residents and teaching of new residents to the service on expectations of shift handovers is vital to continue improving as a residency program and patient safety.

**NO. 92**

**EMERGING COMPLIANCE ISSUES DUE TO SEXUAL SIDE EFFECTS OF ASENAPINE**

*Lead Author: Samina Mirza, M.D.*
*Co-Author(s): Mahreen Raza, M.D., Najeeb U Hussain, M.D.*
*Rutgers NJMS NJ*

**SUMMARY:**

Abstract: Emerging compliance issues due to sexual side effects of Asenapine
Objective:
Since the advent of newer antipsychotic medication with relatively good side effect profile we are observing quicker and relatively improved symptoms profile. As it is very well understood that antipsychotic medications have variety of side effects and specific side effects correlate with non-adherence. The clearest advantage of this new atypical antipsychotic is a reduced risk of extrapyramidal side effect and probably less metabolic syndromes. The aim of this current study is to examine the relationship of asenapine or its ingredient with sexual side effects. It has a unique pharmacologic profile as it targets multiple dopamine, serotonin and adrenergic receptor subtypes with variable affinities. Such drug/receptor interactions contribute to the antipsychotic and antimanic efficacy of asenapine. So far there are no reported cases of adverse sexual effects of Asenapine.
Methods: Case presentation and literature review. We present a case report of patient who developed difficulty in maintaining an erection after starting the asenapine.
CASE REPORT:
This is a 47 year old Jamaican male with a past psychiatric history of Bipolar I disorder who presented to the ER for his for pneumonia. Psychiatry is consulted as patient was having sexual side effects of a relatively new medication, asenapine, two weeks ago. evaluation patient was on asenapine 10 mg PO nightly, started last 2 ½ weeks ago. He reported that he had noticed trouble in maintaining an erection. He reported his manic symptoms have subsided but his erection problem is giving him embarrassment and anxiety. He requested change in his medication. The patient had no history of smoking, alcohol consumption, any other associated pathology or concurrent drug intake. He denied any history of physical or sexual abuse. There was no history of such an episode in recent past or any medication allergy. Asenapine discontinuation resulted in improvement of his erectile dysfunction.
CONCLUSION:
This case not only provides an additional information about potential new side effect of asenapine usage, but also enables clinician to foresee potential obstacle in medication compliance, which would be essential for better management of psychiatric illness. It is also studied and validated by Naranjo scale as the side effect of asenapine.

**NO. 93**

**DIAGNOSTIC AND TREATMENT CHALLENGES ASSOCIATED WITH PANDAS: A CASE SERIES**

*Lead Author: Dhruv Modi, M.B.B.S., M.D.*
*Co-Author(s): Suresh Sabbenahalli, M.D.,Donard Dwyer,P. hD.,Lee Stevens, M.D.*

**SUMMARY:**

PANDAS (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections) is characterized by sudden or abrupt onset of Obsessive Compulsive Disorder or tic disorders in a patient following streptococcal infections. PANDAS are currently diagnosed solely based on clinical history and presentations. There are no specific guidelines for diagnostic clinical evaluation which may lead to overdiagnosis and overuse of antibiotics. Here we review a case series of two pediatric patients who presented with possible symptoms of PANDAS. The patients were treated with an extensive course of antibiotics with no significant improvement in their psychiatric symptoms.
Case 1
A 8 yr old white female with past medical history of recurrent otitis media and URI was admitted by the pediatric department for suspicion of PANDAS. The patient presented to the hospital with sudden onset of anxiety, obsessive compulsive behaviors such as frequent hand washing, and irrational fears. The symptoms began one week after the death of the patient's pet dog as reported by her mother. The patient was treated with Zithromax for sore throat two weeks ago prior to the admission. While being treated for PANDAS, she was evaluated for possible infections or autoimmune reactions which showed no signs of underlying medical cause. Her MRI did not show any changes that accounted for the current condition. The patient was treated with PEN-VK and Augmentin during hospitalization for suspected PANDAS, but during discharge she was still exhibiting symptoms of anxiety and OCD.
Case 2
The patient is a 7 yr old female who presented at the outpatient psychiatric clinic with persistent symptoms of anxiety, tics, difficulty in school and OCD over the past year after being treated for an upper respiratory tract infection with antibiotics. All labs came back negative. The patient completed 28-days course of azithromycin for PANDAS-related symptoms and was currently on clonazepam for persistent behavioral and anxiety symptoms.
Discussion
We described two different cases where sudden onset of OCD, anxiety and tic disorder symptoms started after upper respiratory tract infection. This observation suggests there may be a causal relationship between recent infections and abrupt onset of psychiatric symptoms. However, in case 1, the psychiatric symptoms started after a stressful event which may have led to possible misdiagnosis of PANDAS. In both cases, the patients were treated with antibiotics for PANDAS-related symptoms without any source of present infection, and the symptoms persisted after extensive treatment. This may raise questions regarding the appropriateness of antibiotics in the treatment of PANDAS.
Conclusion
PANDAS still has imprecise diagnostic criteria that may need more refining. Current treatment guidelines rely on the use of antibiotics to treat PANDAS. The validity of this approach needs to be addressed further through clinical research.

**NO. 94**

**EFFECTIVENESS AND USEFULNESS OF A PILOT OBSERVED STRUCTURE CLINICAL EXAMINATION (OSCE) FOR PSYCHIATRY RESIDENTS AND MEDICAL STUDENTS**

*Lead Author: Juliet J. Muzere, D.O.*
*Co-Author(s): Racquel Reid, M.D.*

**SUMMARY:**

Introduction:
To our knowledge, there has been little research to examine whether implementation of psychiatry-specific Observed Structured Clinical Examinations (OSCE) would be an effective and useful means for training programs to determine psychiatric resident readiness for CSV examinations or boards. Furthermore, there has been no research to evaluate whether specialty-specific OSCEs could evaluate residents response to feedback, readiness to teach, and evaluation of their patient care skills overall. We devised a mock-OSCE activity in order to appraise psychiatric residents on the above criteria and rotating students on their interview and assessment skills.
Methods:
Participants included 15 residents (four PGY-I; four PGY-II; six PGY-III; and one PGY-IV), three Morehouse faculty members and two medical students. The activity comprised four stations with cases of common presentations of mental illness: psychosis, unipolar depression, mania, and PTSD with alcohol abuse. There were four PGY-I/PGY-II teams which rotated through the stations. The PGY-I in each team was instructed to conduct a 25-minute interview of the PGY-III or student acting as patient, and the PGY-II gathered follow-up information then presented to the PGY-III resident acting as attending. Faculty and the sole PGY-IV resident facilitated one session each providing feedback to the PGY-I/PGY-II teams. The PGY-III residents secondarily provided peer-to-peer teaching and feedback to the junior residents at completion of each session before allowing them to rotate to the next. To preserve the integrity of the OSCE, residents were encouraged not to disclose information regarding the cases with their fellow colleagues during or after the activity.
Results:
The OSCE activity ran the entire length without any disruption, each participant was able to abide by the rules set forth in this simulated assessment, and was preliminarily deemed to be a success. A 9-question survey employing a Likert scale was later distributed to all of the residents to assess their opinions regarding the OSCE experience. Residents were asked to evaluate the validity, reliability, and satisfaction of the OSCE, instructed to rate their interviewing skills and teaching skills (if applicable), and to critique themselves regarding their performance on the activity. (Data will be available when all submissions have been completed).

**NO. 95**

**PIERRE RIVIÈRE VERSUS ANDERS BREIVIK: IS HISTORY REPEATING ITSELF?**

**RATIONALITY, MADNESS, AND PSYCHOPATHOLOGY IN THE 19TH AND 21ST CENTURY**

*Lead Author: Lars S. Nilsson, M.D.*
*Co-Author(s): Milting, Kristina, M.D., Parnas, Annick Urfer, M.D, Ph.D., Petrov, Igor, M.D., Sjaelland, René, M.D.*

**SUMMARY:**

Introduction:
In 2011 Anders Breivik, AB, slaughtered 77 civilians in a twofold attack on downtown Oslo and the island of Utøya. In the ensuing trial AB's sanity or lack thereof was fiercely contested as two psychiatric evaluations arriving at radically different conclusions were drawn up. One found AB to be suffering from paranoid schizophrenia whereas the other discovered no psychotic manifestations and instead diagnosed him with a narcissistic personality disorder with antisocial traits.
Though unrivalled in the scope of its bestiality the case of AB is not unique. In 1835 French peasant Pierre Rivière, PR, in a seemingly incomprehensible act of cruelty killed his immediate family. Some contemporaries including Esquirol saw in PR the traces of radical irrationality while others ascribed the deeds to an evil constitution. Thus a basic disagreement on the make-up of rationality and madness is seen to persist across the centuries and the advances made in all fields of psychiatry. It is the goal of this poster to clarify the nature of this divergence of opinions and to point a way forward.
Methods:
A 1975 book by Foucault et al. contains a manuscript by PR detailing the background for his actions, exempts from contemporary sources, and a number of analyses of the psychiatric evaluations that followed. During the trial of AB the two psychiatric evaluations were leaked to the press, thus making it possible to carry out a phenomenologically informed, comparative psychopathological reading of the documents using the case of PR as a perspectival backdrop for understanding the disagreement at play.
Results:
As were the case in 19th century France a certain grille de lecture influences the evaluations of AB. Rather than being neutral case reports the evaluations paint different portraits as pertinent omissions of certain facts are made. Thus the second evaluation manages to invoke an aura of rationality around AB that allows for radically different interpretations of behavior and statements that were initially considered indicative of psychosis.
Discussion and conclusion:
As the recent debate over the revision of the DSM clearly demonstrated current diagnostic praxis faces gross challenges. It appears to be this fundamental crisis of both academic and clinical psychiatry that is encapsulated in the disagreement on the constitution of PR and AB. Across almost two centuries and the huge strides made by neurobiology and the cognitive sciences these two cases seem to have run a parallel yet somewhat misleading course. Prominent psychiatrists have called attention to the unintended consequences of adopting the diagnostic manuals as the ultimate authority on psychopathology. We suggest that a renewed interest in the continuation of a phenomenological psychopathology with a strong eye for context and Gestalt as opposed to mere "symptom-counting" is indeed called for as a sine qua non for a psychiatry that strives for both reliability and validity

**NO. 96**

**A PSYCHIATRIC CONSULTANT'S FIELD GUIDE FOR CREATING BEHAVIORAL PLANS: THE NEEDS MET METHOD**

*Lead Author: Kathryn R. Norfleet, M.D.*
*Co-Author(s): Alexander W. Thompson, MD, MBA, MPH*

**SUMMARY:**

"Difficult" patients exhaust our capacity for empathy when attempts to provide necessary medical care are met with entitled demands, treatment sabotage, and self-destructive refusal to participate in care(1). A defining characteristic of these patients is the presence of difficult personality styles(2). This includes frank personality disorders as well as maladaptive character

traits exaggerated during the stress of acute medical illness(3). Despite the high prevalence of maladaptive patient behaviors that interfere with care, developing and implementing effective behavioral plans is a clinical skill that is not systematically taught in psychiatry training programs. To meet this clinical and educational need, we propose and demonstrate a generalizable method for creating behavior plans to address maladaptive patient behaviors in the general hospital. METHODS:We completed a systematic review of the literature addressing difficult patient management. This was assimilated with clinical experiences to create a behavioral planning method. Implementation of this method is demonstrated by its application on a difficult patient case. RESULTS:We created the NEEDS MET method to address clinical and educational needs. Clinically, it serves two purposes. First, it guides creation of a comprehensive and individualized plan for managing patients' maladaptive behaviors according to patient problems (NEEDS): No motivation, Emotional dysregulation, Entitlement, Demands, Dangerous behavior and Splitting. Second, it outlines the essential elements of support the consulting psychiatry team provides to the medical team (MET): Modeling implementation of the plan, Education of the team regarding patient behaviors, and Talking with the team to provide validation. In addition, the NEEDS MET method serves as a model for teaching residents how to create effective behavioral plans. We demonstrate the application of this method to a narcotic dependent man with a severe cluster B personality disorder being treated on a surgery service for an infected pseudoaneurysm. Due in part to bad behaviors and addiction, care had reached a stalemate marked by nursing apathy, surgeon frustration, and severely limited medical progress. Our team developed a straightforward behavioral plan based on the NEEDS MET method, resulting in substantial patient improvement and decreased provider distress. CONCLUSIONS:The NEEDS MET method for creating behavior care plans for difficult inpatients in the general hospital serves both clinical and educational needs in psychiatry. In this case example implementation of the NEEDS MET method results in decreased patient and provider suffering, allowing for appropriate medical care in even the most challenging circumstances. We discuss common challenges with behavior plan implementation. Future research should aim to systematically assess whether application of the NEEDS MET method significantly effects patient and provider satisfaction and patient outcomes.

**NO. 97**

**WHERE IS MISS SUKHVINDER? ANALYSIS BASED ON FONAGY'S DEVELOPMENTAL STAGING**

*Lead Author: Mi ae Oh, M.D.*
*Co-Author(s): Chanmin Park, M.D., Geon Ho Bahn, M.D., Ph.D.*

**SUMMARY:**

Introduction: In spite of endeavor of allied professionals for school mental health, adolescent mental health issues are becoming more serious: school bullying, substance and game addiction, self-harm, adolescent pregnancy, and even adolescent suicide. How and what do we do to solve and prevent those flood tides? We tried to find the answer from the mentalization theory. The mentalization theory is a basic principle for understanding human mind and solving unconscious conflicts and symptoms. Unfortunately, mentalization theory, like contemporary psychoanalytic theory, is hard to understand and difficult to approach in clinical practice, especially adolescents. To overcome this obstacle, the author analyzed adolescent characters in 'Casual Vacancy' written by Joanne Rowling based on maturation theory.
Methods: We got personal and familial histories of teenagers with multiple behavioral problems attending Winterdown school at Pagford. Adolescents in the book frankly portray various features of the current school society: Sukhvinder, a low self-esteemed girl, a victim of bullying with habitual self-mutilation; Krystal, a girl who struggles to regain a healthy ego despite her poverty and sexual promiscuity (but eventually commits suicide); Andrew, a young drug addict; and many other bystanders.
We interpreted adolescents' characteristics based on developmental modes: psychic equivalence mode, pretend mode, and the teleologic mode. And introduced the concept of level of maturation, under or hypermentalization.
Results: Many characters in the novel have problematic parents and families with overlapping immaturity or failure of mentalization development. Inappropriate attachment and under- or hyper-matured mentalization developed various problems as they grew up, and this may represent adolescent problems of the modern society.
Among them we introduced Ms. Sukhvinder case as an example. A daughter of a Pakistan-British elite family whose parents are both clinicians she is a miserable student compared to her parents' expectation. Because of her excellent brother and sister, her mother treats her with a cold attitude busy criticizing and browbeating her. Her self-esteem is too low to handle her situation. She is also ostracized at school for her hairy and dark appearance. When she is submerged in inferiority and shame, with difficulties in the real world, her only exit was cutting her wrist. Facing an emergency situation, she regressed into earlier stages, and psychic equivalence and pretend mode seems to be predominant.
Discussion: By analyzing behavioral problems of the characters, we can estimate and assess the patterns of attachment, empathy, and mentalization abilities of their current and childhood development. We also connect them with behavioral characteristics, further estimating probable problems in adolescents.

**NO. 98**

**EMPATHY OF YOUNG TRAINEES IN KOREA**

*Lead Author: Chanmin Park, M.D.*
*Co-Author(s): Jai Young Lee1, Yeon Jung Lee1, Minha Hong1, Chul-Ho Jung2, Yeni Synn2, Young-Sook Kwack3, Jae-Sung Ryu3, Tae Won Park4, Seong Ae Lee1, Geon Ho Bahn1*

**SUMMARY:**

Introduction
Empathy is crucial for doctor-patient relationship and may contribute to the quality of treatment outcome. However, there is not enough data on how to facilitate and/or strengthen empathy during residency and internship training. This study aims to investigate empathy in residents (with various subspecialties) and interns, along with factors which may influence empathy.
Methods
Questionnaire packages including socio-demographic data, Jefferson Scale of Empathy HP-version Korean edition (JSE-HP-K), and Maslach Burnout Inventory (MBI), were answered by 317 out of 751 residents and 122 out of 191 interns from four

university hospitals. The specialties of residents were classified into 2 groups: "people-oriented" which includes internal medicine, pediatrics, obstetrics/gynecology, family medicine, rehabilitation medicine, psychiatry, neurology, ophthalmology, dermatology, preventive medicine, emergency medicine, occupational environmental medicine, and tuberculosis; "technology-oriented" such as general surgery, orthopedic surgery, neurosurgery, plastic surgery, thoracic and cardiovascular surgery, otorhinolaryngology, laboratory medicine, anesthesiology, radiology, radiation oncology, pathology, urology, and nuclear medicine.
Results
Among the residents, those with 'people-oriented' specialties, women, married and with children showed significantly higher empathy scores but no difference in burnout scores. Sub-analysis within the "people-oriented" group showed higher empathy scores in 4th-year residents than 1st-year residents.
There were no significant difference in empathy and burnout scores regarding grade, specialty, sex, marital status and children. Those with two or more siblings showed higher empathy scores than those who had one or none.
There were no significant difference in empathy and burnout scores between residents and interns.
Discussion
These results suggest that empathy is associated with specialties and individual factors such as marriage, siblings and children. Whether empathy is determined by personal propensity or influenced by residency programs may be further investigated in future studies.

**NO. 99**

**ATTITUDES OF MEDICAL STUDENTS, RESIDENTS, FELLOWS AND CLINICAL FACULTY AT TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER TOWARDS TEXTING/SHORT MESSAGING**

*Lead Author: Rashmi P. Parmar, M.D.*
*Co-Author(s): Surendra Varma, M.D., Lauren Cobbs, M.D., Simon Williams, PhD, Tomas Tenner, PhD, Dondi Ramos, Jongyeol Kim, M.D.*

**SUMMARY:**

Introduction: As texting/short message service (TXT/SMS) is gaining popularity as the preferred means of communication in healthcare, there have been concerns that TXT/SMS could be a potential cause of distraction leading to increased incidence of medical errors and conflict amongst physicians and medical students (MS). There is little study on how widely TXT/SMS has been used and attitude and perception of TXT/SMS by physicians and MS.
Objective: To understand attitudes and perception of physicians and MS towards TXT/SMS.
Method: We created a sixty-eight item survey for a cross sectional study among clinical faculty, residents, fellows, and MS at Texas Tech University Health Sciences Center School of Medicine. After IRB approval, data was collected over 3 months with participant's consent via on-line survey software. We used descriptive statistics, Chi-square and Mantel-Hanszel test.

Results: The total respondents were 198: 28% of clinical faculty (53/193), 15% of residents (31/205), 9% of fellows (3/33), 19% of MS (111/589). Ninety five percent of the respondents (191) used TXT/SMS. The majority of users were below 50 years of age (Fisher's exact test, p = 0.049). Non-users felt that TXT/SMS during rounds/patient care was inappropriate (p= 0.017) and offended by other people's TXT/SMS in their presence (p = 0.015). Non-users felt that TXT/SMS compromised confidentiality in healthcare (p = 0.006). The users below 50 years responded more favorably regarding distraction (p= 0.0004) and denied negative influence on their performance overall (p = 0.027). While 27% checked TXT/SMS, 8% texted for patient care while driving.
Conclusions: We confirmed that TXT/SMS is widely used for communication by physicians and MS for both personal use and patient care. The respondents younger than 50 years have significantly used TXT, which reflects the popularity of TXT and technology among the younger generation. Non-users showed negative attitude toward TXT/SMS. The prevalence of TXT/SMS during driving by physicians and MS was similar to that of general population. The dangers and risks of texting while driving must be emphasized to all healthcare personnel. Further research on effectiveness of education and legislation on minimizing adverse behaviors related to TXT/SMS among healthcare providers are warranted.
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**NO. 100**

**NICOTINE ABUSE, DEPENDENCE, AND WITHDRAWAL: THE DIAGNOSES THAT ARE INVISIBLE IN THE SCHIZOPHRENIC POPULATION**

*Lead Author: Varinderjit S. Parmar, M.D.*
*Co-Author(s): Ewa Talikowska-Szymczak MD, Gbolahan Odejayi MD, Dianne Groll PhD*

**SUMMARY:**

OBJECTIVES
To find out whether physicians explore nicotine dependence/Abuse/withdrawal in schizophrenic population.
To know if physicians document nicotine dependence/Abuse/withdrawal in schizophrenic population on Axis 1.
To highlight the importance of complete nicotine screening in psychiatric population and documenting it on Axis 1
INTRODUCTION
The treatment of smoking behaviour in psychiatric patients remains a challenge for most mental health professionals. The population of mentally ill persons is being disproportionately affected by the tobacco epidemic. In Canada, about one in five people are affected by mental illness, and an estimated 50% of them (and up to 90% of patients diagnosed with schizophrenia) are smokers.
METHODS
Charts of all psychiatric emergency room patients were reviewed retrospectively. Data for emergency psychiatric visits of 2 tertiary care hospitals was obtained from a five year period,

April 2006 to March 2011.
The data was compiled to record all psychiatric presentations .Collected data included patients' visit times, dates, genders, ages, and primary diagnosis.Schizophrenic patient population was sorted out and retrospective charts were reviewed done to find out whether nicotine dependence/Abuse/withdrawal was explored and documented.
RESULTS
Out of 502 patients diagnosed with schizophrenia and other psychotic disorders, only 43.4% (218 patients) were found to have documented nicotine use status [24% recognized as smokers and 20% nonsmokers] either in their history or in one of their diagnostic Axes.
Remaining 56% (284 patients) did not have any signs of their nicotine use status reported, which means that more than a half of the patients had not been assessed in regards to their nicotine usage or results of their assessments have not been documented.
CONCLUSIONS
Nicotine related disorders and smoking history are not being recognized in patients diagnosed with schizophrenia and other psychotic disorders. We found only 43% patients, who were diagnosed with schizophrenia and other psychotic disorders, to have their nicotine smoking status reported in their medical documentation.
Even if recognized in the history, there is a lack of appropriate documentation of existing nicotine related disorders in the diagnostic Axis 1, which results in nicotine related disorders being under diagnosed and overlooked. None of the patients enrolled in our study had their nicotine smoking status documented under Axis I, whereas 88% of patients had it reported only in their history.
There is a great need for implementation of appropriate education for all mental health professionals in regards to the appropriate nicotine use and nicotine related disorders recognition and diagnosis. As well, we find it crucial to highlight the importance of documentation of nicotine related disorders in order to address best available treatment options and promote smoking cessation in psychiatric patients' pollution.

**NO. 101**
**USING THE 'PERSPECTIVES' APPROACH TO PSYCHIATRIC EXAMINATION**
*Lead Author: Kamal Pathak, M.D.*

**SUMMARY:**
"The Perspectives of Psychiatry" by Drs. Paul McHugh and Phillip Slavney (Johns Hopkins University Press) provides a method of organizing and synthesizing the information obtained by psychiatric history and examination in order to identify and isolate the multiple contributing factors to a patient's illness. The method directs psychiatry residents to specifically identify the disease, dimensional, behavioral, and life story factors that can contribute to psychopathology. Residents learn to recognize what a patient has, who he is, what he does, and what he has encountered that lead to trouble. In each case the narrative approach useful in psychotherapy as well empirical determinations related to physical/drug treatment are evaluated. Combining the traditions of Jaspers and Meyer, the "Perspectives" enables residents to go beyond the categorical, checklist-style of interviewing prevalent in contemporary residency training.
At the University of Miami Department of Psychiatry, a seminar series was initiated by residents where residents and medical students met every other week for 6 months at the home of supervising faculty (Dr. Marshal Folstein) to critically discuss the "Perspectives" using a tutorial format. A resident was responsible for a presentation based on assigned parts of the book each meeting. Seminar members were encouraged to support their positions by citing research from both medicine and the social sciences, with the course culminating in a question and answer session with Dr. McHugh via Skype technology. This poster discusses the various methods the author used to stimulate interest in the seminar, organizational details, incorporation of social media to stimulate online discussion, challenges encountered, perceived usefulness by seminar members and non-members, comparisons to similar seminars at other institutions, and suggestions for future implementation of such a seminar in psychiatry residency education.

**NO. 102**
**INCLUDING A POVERTY SIMULATION EXPERIENCE IN A RESIDENTS TRAINING CURRICULUM TO PROMOTING EMPATHY**
*Lead Author: Malathi Pilla, M.D.*
*Co-Author(s): Trinadha Pilla, MD, Aghaegbulam Uga, MD, Jacqueline Ferguson, MA, Karen Broquet, MD, Jeffrey I. Bennett, MD, Andrew Varney, MD,*

**SUMMARY:**
Introduction: Residents during their training can develop an emphasis on objectivity leading to the potential development of "elitism." This attribute may result in decreased empathy. While altruism is a desired vision for many physicians entering medicine profession, they can however get distracted from their initial idealism. Thus, one goal of training is enhancing a resident's ability to empathize with patients of different backgrounds. This study was undertaken to gauge the effectiveness of such an intervention.
Methods: Resident physicians participated in an interactive poverty simulation experience during an annual retreat designed to help residents be sensitized to the challenges of living in poverty and develop a sense of empathy toward people living in poverty. A total of 37 residents participated. Pre- and post-simulation surveys were completed which contained empathy items from a validated scale and 18 items regarding perceptions about poverty.
Results: The 18-item questionnaire showed that residents gained a greater appreciation and understanding of what it is like to live in poverty. Categorical first-year residents scores dropped from a pre-survey mean of 2.95 to a post-survey mean of 2.65 ($t = 4.04$; $df = 233$; $p \leq 0.0001$), and third-year residents dropped from a pre-survey mean of 2.74 to a post-survey mean of 2.49 ($t = 3.76$; $df = 251$; $p = 0.0002$); the scores of preliminary first-year residents also reduced, but they were not statistically significant. Similar trends were noted with the Empathy Survey, which was scaled in the opposite direction of the 18-item questionnaire. Categorical first-year residents saw an increase in empathy, as indicated by increased mean scores from 3.4 to 3.6 ($t = -2.21$; $df = 51$; $p = 0.0316$); third-year residents also saw an increase in their mean scores from 3.4 to 3.6 ($t = -3.1$; $df = 51$; $p = 0.0031$). Again, preliminary residents did not have statistically different means for pre- versus post-surveys.

Conclusions: The half-day simulation had a positive impact and significantly increased the resident's empathy for people in poverty. Empathy is the foundation of a physician patient relationship and it should frame the skills in our medical profession. Medical educators should take a note of the likely decline in empathy in their residents as early as the first year and adopt innovative teaching tools to promote the development of empathy and reduce its potential further decline. Teaching empathy among resident physician through innovative methods such as Poverty Simulation should be a part of the curriculum in a resident physician training.

**NO. 103**

**ELECTROCARDIOGRAPHY FOR PSYCHIATRISTS**

*Lead Author: Samina S. Raja, M.D.*
*Co-Author(s): Mahreen Raza, M.D., Najeeb U. Hussain, M.D.*

**SUMMARY:**

Psychotropic medications are commonly associated with ECG changes. Due to the high prevalence of polypharmacy and use of psychiatric medications to manage comorbid substance abuse, there are often numerous potential sources of ECG changes that can easily be overlooked. Unfortunately, the literature shows that ECG interpretation amongst psychiatrists is poor (Solomons et al, 2008) and machine interpretation has not proven to be reliable (Willems et all, 1991). Here we present a literature review of psychotropic medications and their associated ECG findings. This review thus serves as a guide for clinicians in the recognition and interpretation of electrocardiographic changes due to psychiatric medications and to help prevent morbidity and/or mortality from undetected abnormal heart rhythms.

**NO. 104**

**FROM INFORMATION TO SIMULATION: IMPROVING COMPETENCY IN ECT TRAINING**

*Lead Author: Anetta Raysin, D.O.*
*Co-Author(s): Joseph Carmody, M.D., Brian Gillett, M.D., Nidhi Goel, M.D., Theresa Jacob, Ph.D., MPH, Scot G. McAfee, M.D.*

**SUMMARY:**

Background: Electroconvulsive therapy (ECT) remains a valuable therapeutic tool that is standard of care in current psychiatric practice. To educate clinicians on the theoretical and practical applications of this technique, residency programs provide varying degrees of training, from didactics alone to performing ECT under supervision. However, the degree to which residents are exposed to ECT varies significantly between programs due to the demands of local patient populations and due to state statutes. Residents training at institutions where ECT is infrequently employed have little hands-on experience with this intervention. As such, this study aims to develop a new educational model to supplement traditional didactics with a practical approach to learning the procedural aspects of ECT via simulation-based education. Surveys and proficiency assessments will be used to compare pre and post curricula results in order to identify the impact of simulation training on residents' knowledge and proficiency with ECT. Objective: To compare resident learning gains for ECT between a didactic curriculum alone vs. one augmented with simulation-based training. Methods: In this prospective randomized controlled study, the efficacy of 2 educational modalities for teaching ECT will be evaluated. All psychiatry residents (n=35) will complete an anonymous survey to ascertain baseline comfort, prior experience and knowledge for ECT. They will then be block randomized by training level to participate in either a didactic ECT curriculum alone or a didactic curriculum augmented by simulation training. Within two weeks of completing curricula, each resident's theoretical knowledge gain, comfort level and proficiency for ECT will be re-assessed using a post-curricular survey and an assessment at performing ECT in a simulated environment. In order to provide equal learning opportunity, the residents who were not randomized to simulation will be given the same simulation-based instruction after their assessments are completed. To identify the relative efficacy of simulation training, the residents' mean change in pre- and post- assessments will be compared between the two groups. Results: Pending IRB approval, psychiatry residents will complete the pre and post simulation survey that will assess their comfort and knowledge level of the theoretical and procedural aspects of ECT. Conclusions: Although residents currently receive four hours of didactics on ECT at MMC, their involvement in the procedure is highly dependent on the local population. With the proposed curriculum change, residents will receive ubiquitous exposure in both the classroom and simulation laboratory where they can practice and gain confidence in their ability to perform ECT.

**NO. 105**

**ALCOHOL WITHDRAWAL TREATMENT IN A NUTSHELL**

*Lead Author: Mahreen Raza, M.D.*
*Co-Author(s): Aikaterini Fineti, M.D, Komal Patel, MSIII*

**SUMMARY:**

Aims/Objectives
1. To recognize signs and symptoms of Alcohol withdrawal
2. To understand how to screen and treat Alcohol withdrawal
3. To improve the efficiency of treating Alcohol withdrawal to prevent lethal consequences.
Background
Alcohol withdrawal does not always present with the classic symptoms of irritability, headache, tachycardia, and tremor. Atypical presentations of alcohol withdrawal can be detrimental and even lethal if not treated in a timely and efficient manner. We need an assessement tool that will better assist us in recognizing withdrawal. Currently the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) scale is an assessment tool that can be used to quantify the severity of alcohol withdrawal syndrome, and to monitor and medicate patients with withdrawal. CIWA-Ar scores of 8 points or fewer correspond to mild withdrawal, scores of 9 to 15 points correspond to moderate withdrawal, and scores of greater than 15 points correspond to severe withdrawal symptoms and an increased risk of delirium tremens and seizures.
Methods
Literature review on PubMed search engine with terms "Alcohol withdrawal scales" and "Alcohol withdrawal criteria" was done to assess the effect of using different scales in cases of Alcohol withdrawal.
Discussion:
Discussion of varied withdrawal symptoms is crucial. Symptoms typically present about 8 hours after a significant fall in blood

alcohol levels. They peak on day 2 and, by day 4 or 5, the symptoms have usually improved significantly. Minor withdrawal symptoms (can appear 6-12 hours after alcohol has stopped). Insomnia and fatigue.
tremor, mild anxiety/feeling nervous, mild restlessness/agitation, nausea and vomiting, Headache, excessive sweating, palpitations, anorexia, depression, craving for alcohol are all minor symptoms. Alcoholic hallucinosis and withdrawal seizures (can appear 24-48 hours after alcohol has stopped) also important to predict early.
Alcohol withdrawal delirium or 'delirium tremens' (can appear 48-72 hours after alcohol has stopped), which usually gets attention, psychiatric consult and appropriate treatment. Our main goal here is to understand that atypical and higly varied presentation can lead to misdiagnosis and lack of availability of appropriate treatment which can lead to fatal outcomes.
Conclusion:
Diagnosis in timely fashion is crucial and a very important step to take right initiatives.

**NO. 107**

**FROM ERROR RIDDEN TO EXPERTISE DRIVEN: ENHANCING THE DIAGNOSTIC ACUMEN OF PSYCHIATRISTS AND TRAINEES THROUGH EXPERTISE BUILDING STRATEGIES**

*Lead Author: Manivel Rengasamy, B.A.*
*Co-Author(s): Vineeth P. John, M.D., M.B.A., Marsal Sanches M.D., Ph.D.*

**SUMMARY:**

Psychiatric practice is complex and uncertain. The non-availability of reliable diagnostic tests makes the diagnostic thinking process particularly critical in the psychiatric clinical practice. Most of the diagnostic errors in psychiatry are the result of cognitive errors and often could be avoided by being adept at the various cognitive de-biasing strategies. Often, cognitive biases such as premature closure, availability error, and context error lead to diagnostic errors. Overall, experts have improved diagnostic accuracy, suggesting that they may be able to reduce diagnostic errors through four different mechanisms: (1) efficient heuristics (2) improved metacognition (3) domain-specific knowledge (4) enhanced deliberate practice techniques. In our poster, we will be summarizing the literature on cognitive errors in diagnostic decision making and we will also be emphasizing various cognitive de-biasing strategies to improve psychiatric diagnostic accuracy.

**NO. 108**

**HOLIDAY SEASONAL AFFECTIVE DISORDER**

*Lead Author: Suresh Babu Sabbenahalli, M.D.*
*Co-Author(s): Lee Stevens, MD*
*Mary Jo Fitz-Gerald, MD*

**SUMMARY:**

Case Report:
Abstract: Holiday season affective disorder is comprised of significant changes in mood and affect with impairment in usual work. Patients feel like they have "lost something in life", have sleep disturbances, do not feel like talking to anyone, and prefer to stay alone. sometimes they start drinking to compensate. Typically, this starts a few weeks prior to Halloween and Thanksgiving and lasts a few weeks after New Year's season.
Case: A 42 year old African American female with past history of depression, stable on medications, reported to outpatient clinic in the second week of November. Complaints of no interest in doing any activities, wanting to stay home all day, stopped calling her family and friends, and smelling alcohol in the evening she felt like drinking. Patient stated she felt better after drinking wine alone with lights and music on. On further evaluation, patient reported that her mother passed away when she was twelve years old and her grandmother died about ten years ago. She recalled good times she had at a young age with her mot a young age with her mother and later with her grandmother. She claimed she cannot forget how she enjoyed this season and felt extremely nostalgic. Patient compared this to her present situation in which she does not have anyone in her life who showed similar love.
Discussion:The holiday season is very exciting for most people, however, in some it can be devastating, especially when they have undergone significant past experiences which can be either pleasant or unpleasant. Individuals may compare past events to present ones or recollections from the past can be very distressing and affect their mood. In this case, the patient's affect and mood significantly changed during every holiday season because of her past experiences and returned to baseline once the season has passed. The patient's explanation of smell and taste sensation of alcohol for a few days at the onset of her symptoms does not meet criteria for olfactory and gustatory hallucinations, as the patient senses these for only one or two days. It then goes away once she starts drinking a glass of wine. The patient's function is significantly impaired as she tries to isolate at home and avoids calling any family or friends. However, she did not meet the DSM V criteria for major depression or any other mood disorder. Patients with this syndrome often refuse any intervention. However, motivational interviewing and psychodynamic psychotherapy appear to be very helpful.

**NO. 109**

**ATYPICAL BEHAVIORAL CHANGES IN EARLY BRAIN LESIONS**

*Lead Author: Swamy Suresh Sabbenahalli, M.D.*
*Co-Author(s): Dhruv Modi,M.D., Syeda Munir,M.D.*

**SUMMARY:**

Abstract:
Atypical behavioral changes are sometimes seen in newly-emergent brain lesions; however these changes can easily be missed or are difficult to recognize. Standard diagnostic criteria may not be useful in these cases, because the patient may not recognize the symptoms or actually denies the symptoms that are observed. Here we review a case series of two patients who visited the psychiatry outpatient clinic for possible symptoms of major depression. The patients were initially identified on the basis of unusual behavioral changes. Further workup revealed radiological evidence of early brain lesions, and neurosurgery was consulted. Patients' symptoms were significantly improved after surgical intervention.
Case Report:
Case 1:
A 66 year old Caucasian male with past history of lung cancer was seen by the consult service for unusual behavioral changes. At the initial evaluation, the patient denied having psychiatric illness. During subsequent visits, we noted unusual

answers ("I did not ask anyone for psychiatry help") and denial of a previous suicide attempt. Additional workup revealed ring-enhancing lesions with vasogenic edema, including one in the right frontal area (17 mm). The patient significantly improved after surgical intervention.
Case: 2
A 68 year old male was referred by internal medicine for unusual behavior. He stopped taking care of his farm, was detached from his family and slept more during the day. Upon psychiatry evaluation, the patient denied his symptoms or any changes in recent behavior. He refused psychiatry intervention. Nevertheless, his family reported significant behavioral changes. Further evaluation revealed radiological evidence of three small lesions in right frontal lobes. Symptoms improved significantly after neurosurgical intervention.
Discussion: Early brain lesions may cause subtle behavioral changes that are difficult to recognize. The nature of the changes depends on the anatomical area involved. In both cases, frontal lobes were affected, the lesions were small and patients did not have significant physical symptoms. Extensive interviews during subsequent visits clearly identified behavioral changes that prompted further radiological evaluation. These cases were difficult because the patients denied symptoms, were uncooperative and refused further testing. Location of the lesions in the frontal lobe presumably gave rise to the personality changes which were observed in both of the above cases. Frontal lobe lesions may also affect intelligence, reasoning, memory, planning, decision making, judgment, initiative, inhibition, mood and movement.

**NO. 110**
**REFUGEE HEALTH EDUCATION EXPERIENCE: A COMMUNITY-BASED APPROACH TO SERVING MULTINATIONAL PATIENTS**
*Lead Author: David J. Savage, B.A.*
*Co-Author(s): Lori M. Bass, B.S., Erika L. Wood, B.S., M.P.H., Sophia Banu, M.D.*

**SUMMARY:**
Purpose: This was a yearlong project aimed at improving healthcare for Houston's refugee community. It was done in conjunction with the Alliance for Multicultural Community Services, one of Houston's refugee resettlement agencies. Agencies like the Alliance are tasked with greeting new arrivals, arranging their initial housing and social services, and helping them become self sufficient with employment in six months. Many refugees are adults who do not yet know English, and this significantly limits their access to healthcare, employment, and public transportation.
Methods: The project included four health fairs, 16 community-based education classes, and a self-help video interpreted in Nepalese for assisting refugees with completing a county insurance application. Health fairs offered free flu vaccines, audiologist hearing screening, nutrition education, and dental hygiene screening in addition to vital sign measurements. Weekend courses at apartment communities covered topics such as health insurance registration, infectious disease control, dental health, and mental wellness. Medical, public health, dental, and pharmacy students helped with health fairs, weekend classes, and program evaluation.
Results: Over 500 unique clients were seen across four health fairs. Additionally, the weekend health classes for Bhutanese, Iraqi, Burmese, Eritrean, and Congolese clients had an average attendance of ten clients per weekend and student volunteer participation was approved as a non-credit elective by the University of Texas Medical School at Houston. We also created a YouTube video in English and Nepalese that can be utilized by all of Houston's resettlement agencies to assist clients speaking those languages in completing Harris County health benefit applications. In June 2013 we were awarded an additional $5,000 from the American Psychiatric Association's Helping Hands Grant Program to continue mental health-specific projects for Bhutanese refugees in 2013-2014. Program planning and institutional review board evaluation of this project extension is currently underway.
Conclusion: This project has laid the groundwork for improving refugee health in Houston by identifying barriers to care and mobilizing volunteers in a sustainable framework to address refugee needs. It has also enriched the professional education of medical, dental, and pharmacy students by helping them to appreciate and serve the needs of a large, culturally diverse population.

**NO. 111**
**AN UNUSUAL CASE OF ANTI-NMDA RECEPTOR ENCEPHALITIS: PSYCHIATRISTS NEED TO CONSIDER THIS DIAGNOSIS IN ADOLESCENT MALES WITH NEW ONSET PSYCHOSIS**
*Lead Author: Humaira Shoaib, M.D.*
*Co-Author(s): Daniel Finch, MD*

**SUMMARY:**
Objectives:
1- To educate psychiatrists about the spectrum of neuropsychiatric symptoms associated with anti-NMDA receptor encephalitis.
2- To describe current diagnostic work-up and treatment of neuropsychiatric symptoms of this condition.
3- To increase awareness of the benefits of effective communication between different medical professionals including internists, psychiatrists, infectious disease specialists, neurologists and gynecologists (for females).
Method: Case presentation and literature review.
Case Presentation: We will describe an unusual case that we encountered on the Psychiatry Service of Hackensack University Medical Center. The case is of a 16 year-old male with no significant past psychiatric or medical history that presented with altered mental status, behavioral outbursts, labile mood, agitation, vomiting, headache, low-grade fever, anorexia, and weight loss. The patient was considered initially to have a primary psychiatric diagnosis and psychiatry was consulted for agitation and behavioral outbursts. After an extensive medical work-up including blood work and neuroimaging, the patient was eventually diagnosed with anti-NMDA receptor encephalitis by lumbar puncture. After the patient was treated with IVIG and Rituxan for the encephalitis and risperidone for mood stabilization, the patient's symptoms improved and he was transferred to a sub-acute rehabilitation center.
Conclusion: Early diagnosis and proper management of this condition is very important to prevent fatal outcomes, and effective communication between medical and psychiatric subspecialists is crucial to attain this goal. Psychiatrists should have a basic understanding of the clinical presentation, differential diagnosis, and treatment of this unusual and under-recognized

condition. This case demonstrates many of the common features of anti-NMDA receptor encephalitis, however it is unusual in that the patient was a teenage male while this disease is often found in slightly older females. It should be considered in adolescent male presenting with new and acute onset of psychotic symptoms following a viral-like syndrome. There is limited literature available on the diagnosis and treatment of this disease in adolescent male and additional research is needed looking at this patient population.

**NO. 112**

**THE DEVELOPMENT OF A GLOBAL MENTAL HEALTH CAUCUS IN THE AMERICAN PSYCHIATRIC ASSOCIATION**

*Lead Author: Veronica Slootsky*
*Co-Author(s): Milangel Concepcion, M.D., Mona Thapa, M.D., Urooj Saeed, M.D., Rajeev Sharma, MD*

**SUMMARY:**

Introduction: In recent years, the importance of addressing mental health from a global perspective has been acknowledged by mental health professionals, given its contribution to the burden of world-wide non-communicable disease (1,2,3). Mental health disorders constitute about 13% of the global burden of disease, surpassing cardiovascular disease and cancer (1). In recognition of this pressing issue and the need to coordinate collaboration and education about this subject, a group of psychiatry residents have spearheaded the effort to establish the Global Mental Health Caucus of the American Psychiatric Association, which was recently approved for creation. The Global Mental Health & Psychiatry Caucus of the APA will focus on culturally-sensitive global mental health education, research, and advocacy for improved access to mental health care through collaboration among health professionals.
Methods: The founding members of the caucus included members in training involved in the Career, Leadership, and Mentorship (CLM) group of the Washington D.C. Psychiatric Society under the mentorship of Dr. Eliot Sorel, the founder and chairman of CLM. The idea for the caucus was conceived by the CLM leadership and strategic planning committee members in training, who participated in and contributed to the World Psychiatric Association 2013 Bucharest Congress at the Palace of Parliament in Bucharest, Romania. During the conference, residents met with APA officials who expressed an interest in creating such a caucus to address the need for improved communication among professionals with similar interests and to increase the international participation within the APA. Residents subsequently met with Dr. Sorel and conceived the mission, vision and objectives of the caucus. They then drafted the caucus proposal and invited APA members interested in global mental health issues to join the new group.
Results: The Global Mental Health Caucus will be a catalyst within the APA for interdisciplinary, open discussions addressing global mental health needs with a focus on the biological, psychological and social determinants of health and their presentations in the national and international arenas. The caucus will also play a vital role in addressing the issue of stigma against mental health patients and professionals.
Conclusions: Resident-led initiatives supported by mentors can serve as a catalyst for positive change in the field of psychiatry residency education, training, and practice within evolving integrated systems of care. They can also create novel local and international outreach tools within the APA.

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**NO. 113**

**INTERACTIONS BETWEEN PHYSICIANS AND THE PHARMACEUTICAL INDUSTRY: A STUDY OF THE PERCEPTIONS OF THE EARLY CAREER PSYCHIATRIST**

*Lead Author: Thomas J. Stark, M.D.*
*Co-Author(s): Jocelyn Lockyer, Ph.D., Keith Brownell, M.D., RCPSC, Nancy Brager, M.D., RCPSC*
*Amanda Berg, M.D., Rhea Balderston, M.D.*

**SUMMARY:**

Background: The pharmaceutical industry has very successfully engaged physicians through supporting medical education, patient care and medical research. New conflict of interest policy has highlighted some of the challenges to these relationships. It is not known how physicians view and manage their interactions with industry.
Objectives: To explore the perceptions that early career psychiatrists have regarding their relationship with the pharmaceutical industry.
Methods: Data were collected through semi-structured interviews with psychiatrists practicing in Calgary. Data were analysed using a grounded theory methodology and iterative approach. Theory was generated around the factors that impact on participants' interactions with the pharmaceutical industry and the strategies used to manage the relationship.
Results: Factors that inhibit interactions with the pharmaceutical industry include: 1) fear of being stigmatized by peers; 2) symbols of industry excess; 3) concern that the interaction will compromise the physician; and 4) inexperience in managing the interaction as training programs limit access to industry representatives. Factors used by industry to promote interactions include: 1) gifting-reciprocity; 2) creating a role for industry within the healthcare system; and 3) controlling the information regarding its products. Psychiatrists ensured their "Professional Integrity" by: 1) understanding industry and its materials; 2) modelling peers; 3) considering the expectations of gifting-reciprocity and industry influence; and 4) managing the interactions between industry and the healthcare environment.
Conclusions: Maintaining one's professional integrity is the underlying driver managing the relationship between early career psychiatrists and industry. This has implications for residency education to optimally prepare trainees for these interactions.

**NO. 114**

**A TRAUMA-INFORMED CURRICULUM FOR SHEWAY, A COMMUNITY SERVICE FOR PREGNANT WOMEN AND NEW MOTHERS WITH ADDICTION AND COMPLEX CONCURRENT DISORDERS**

*Lead Author: Verena Strehlau, M.D.*
*Co-Author(s): R. Michael Krausz, MD, P.hD., Iris Torchalla, PhD, RPsych*

**SUMMARY:**
Introduction: Sheway is a program that is located in Vancouver's Downtown Eastside, one of Canada's poorest neighborhoods. Sheway offers a broad range of social and medical services as well as other supportive services for expecting and new mothers with substance use issues, and their children. In a recent study, we found high levels of trauma experiences and psychological distress among women accessing the services Sheway provides. Trauma-informed services which address both trauma and substance abuse simultaneously and in an integrated manner appear to improve clinical outcome compared to standard care. However, while services at Sheway include substance abuse counseling, trauma informed practices have not been formally integrated into the service delivery model of their services.
Objectives: We received funding through a Canadian Institutes of Health Research (CIHR) dissemination and knowledge translation grant to partner with Sheway and to design a longitudinal knowledge translation and dissemination workshop. The objective of this innovative project is to collaboratively expand Sheway staff's knowledge regarding trauma and trauma-related symptoms in order to strengthen their clinical capacity to effectively support their clients affected by trauma.
Methods & Knowledge Translation Activities: In the past year we delivered eight 2-hour workshops on a variety of trauma-related topics relevant for the everyday work at Sheway, which provide the staff with the knowledge and skills to respond to trauma in the context of addiction services to expecting women, new mothers and their children.
Sheway has a multidisciplinary, non-hierarchical team with different levels of training, and we created one modular and interactive curriculum for all levels of experience to be beneficial for all staff members. We evaluated training satisfaction overall and related to specific training objectives.
Results: Each of the training sessions was attended by all staff members, fluctuating between 20 and 25 individuals. 80% of the staff was satisfied/very satisfied with the training they received. Many staff members also provided qualitative feedback, outlining the importance of trauma-informed care as well as the need to share experiences with their coworkers. One Sheway staff e.g. stated '...It really made me think about our approach to our clients. To look at the 'WHY?". I enjoyed listening to coworkers share their experiences.'
The poster will provide an overview as well as details of the workshop handbook which was recently completed, including examples and learning objectives for each session.
Discussion: In the long term, we anticipate that the workshop will support positive outcomes for the mothers as well as their children who are accessing Sheway. Based on the feedback by Sheway staff, the workshop handbook was modified and tailored to be used by other clinicians who interact with women with substance use disorders and traumatic experiences.

**NO. 115**

**SUICIDE RISK ASSESSMENT BY PSYCHIATRY RESIDENTS: DEFICIENCIES OF DOCUMENTATION**

*Lead Author: Yasas Chandra Tanguturi, M.B.B.S., M.P.H.*
*Co-Author(s): Maria Bodic, M.D., Abraham Taub, D.O., Theresa Jacob, PhD., M.P.H.*
*Department of Psychiatry, Maimonides Medical Center, Brooklyn, NY*

**SUMMARY:**
Background: Assessment and documentation of a patient's potential risk for self-harm are some of the most essential functions that psychiatrists perform. Despite the lack of consensus with respect to the legal standards, performing a systematic suicide risk assessment and documenting it are extremely important, both from a clinical and risk management perspective. Often, psychiatrists perform thorough assessments but fail to document them accordingly. A number of factors have been hypothesized in the literature as being responsible for inadequate documentation including lack of time, an absence of clear guidelines and a dearth of training for psychiatrists in documentation. Despite the medico-legal implications of inadequate documentation, very little research has focused on identifying the shortcomings in evaluations performed by psychiatric residents.

We hypothesize that there is incomplete documentation of suicide risk assessment performed by psychiatric residents in the ER.
Objectives: 1) To compare the suicide assessment documented in the psychiatric evaluations with the process indicators identified from the Columbia Suicide Severity Rating Scale (C-SSRS). 2) To assess the differences in documentation accuracy based on the resident's level of training. 3) To identify the shortcomings of our documentation and develop an educational tool for teaching proper psychiatric documentation.
Methods: This study is a retrospective chart review of a random sample of psychiatric evaluations performed at Maimonides Medical Center Emergency Department (ED) from 11/1/2012 to 10/31/2013. The suicide risk assessments will be evaluated using data regarding level of training of the evaluating resident, demographics, process indicators identified from the C-SSRS and diagnoses. Data will be collected using software developed specifically for this project, with a user friendly interface and drop down menus to allow for rapid data collection by trained reviewers. A total of 4667 psychiatric evaluations were performed in the ED within the identified study period. Based on sample size calculations 289 evaluations were selected using a systematic random sampling technique for review.
Results: From our literature review, we estimate that less than 50% of process indicator criteria are documented in all the evaluations. We also estimate that documentation improves with the PGY level of training of the resident.
Conclusion: To the best of our knowledge, no previous studies have looked at how residents document suicidal risk assessment. Therefore, this study aims to serve two important purposes: first, it will provide valuable empirical data which can be useful for future research about reasons for deficient documentation; secondly, the study will help researchers develop teaching tools to improve the quality of the suicide risk assessment performed by residents.

**NO. 116**

**ENGAGEMENT AND RESOURCES IN PSYCHIATRY RESIDENTS**

*Lead Author: Frank M.M.A. van der Heijden, Ph.D.*
*Co-Author(s): Jelle T. Prins, Ph.D.*
*Hanne Verweij, Ph.D.-student*

**SUMMARY:**
PURPOSE
To get insight in the effects of medical specialty on the relationships between engagement, job resources and personal resources and work among medical residents.
INTRODUCTION
Work engagement is a positive affective-motivational state of work-related wellbeing. Engagement is characterized by vigour, dedication and absorption. Job and personal resources are considered to be the main predictors of work engagement.
METHODS
5245 Dutch medical residents received a self-report questionnaire and 2115 were enrolled in the study (41.1%). A total of 242 residents in psychiatry participated (11.5%). Engagement was measured using the Utrecht Work Engagement Scale. Resources were 1. Job: autonomy, development, social support from colleagues, performance feedback, supervisory coaching and participation in decision making and met expectations and 2. Personal: personal autonomy, social support from partner/family and opportunity for personal development.
RESULTS
Work engagement was significantly correlated with all job and personal resources. The job resources met expectations and job development showed the highest correlation with engagement (Pearsons r=0.442 and 0.433 respectively; p<0.001). Stepwise multiple regression 2 with engagement as dependent variable revealed the strongest influence of met expectations and job development (β= 0.271 and 0.229 respectively; p<0.001). As compared to other specialties the general surgery and psychiatry residents scored significantly higher on resources. Residents in general surgery demonstrated the highest scores on engagement (4.5 ± 0.75). Medical specialty influences the relationship between resources and engagement substantially. Social support from colleagues is especially important for work engagement among residents in general surgery and personal development among internal medicine and obstetrics and gynecology.
CONCLUSIONS
1 Work engagement among medical residents is relatively high, in particular among general surgery residents.
2 Psychiatry residents score high on resources, however this did not result in high engagement levels.
3 - Met expectations and job development are the two most important resources, however there are important differences between the medical specialties.
4 - A differential and customized approach is warranted
Acknowlegdement
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**NO. 117**
**INTERVENTIONAL PSYCHIATRY: A METHOD FOR INCORPORATING NEUROMODULATION INTO PSYCHIATRIC EDUCATION**

*Lead Author: Nolan R. Williams, M.D.*
*Co-Author(s): Joseph J. Taylor PhD, Suzanne E. Kerns MBBS, Greg L. Sahlem MD, E. Baron Short MD, Edward M. Kantor MD, Mark S. George MD*

**SUMMARY:**
Background: Interventional psychiatry is an emerging subspecialty that utilizes a variety of neuromodulation techniques in the context of an electrocircuit-based view of mental dysfunction as a major proximal contributor to refractory psychiatric illness.
Purpose: Currently, general psychiatry residency programs focus the teaching of psychotherapeutics predominantly on psychotherapy and psychopharmacology. There are few standardized learning expectations related to ECT and no standardized learning expectations related to interventional psychiatric techniques such as transcranial magnetic stimulation (TMS) (FDA approved for depression, 2008), vagus nerve stimulation (VNS) (FDA approved for recurrent or chronic treatment resistant depression 2006), and deep brain stimulation (DBS) (FDA humanitarian device exemption, OCD, 2009). In concert with the implementation of the Next Accreditation System (NAS), we propose the development of an interventional psychiatry training paradigm across all levels of medical education corresponding to the relevant ACGME milestones.
Practice Gap: Implementing emerging interventional psychiatric techniques into clinical practice will require a more standardized approach. Standardization should include expectation of competency in predetermined milestones encompassing a minimal level of understanding necessary for today's residents to practice as competent psychiatrists in this generation of scientific psychiatric growth. An exponential rise in the utilization of interventional psychiatric techniques over the last 10 years, enhanced by social, political and technical factors, has contributed to an ever-widening practice gap in the field of psychiatry.
Discussion: We suggest that interventional psychiatry be introduced into training at four levels: (1) at least one dedicated lecture in the third year of medical school demonstrating the current and upcoming neuromodulation technologies, (2) a core curriculum of neuromodulation theory and clinical experience during psychiatry residency training, (3) a well-defined, non-invasive neuromodulation track as a more advanced elective component of psychiatry residency training, (4) a more formal post graduate interventional psychiatry fellowship, and (5) outreach to medical students with a more procedurally-based mindset.
Conclusion: In the first year of implementation, we have had (1) an interventional psychiatry lecture implemented into undergraduate psychiatry education, (2) an 80% attendance of senior psychiatry trainees at a voluntary, in-house one-week intensive neuromodulation course, (3) three trainees enroll in the interventional psychiatry track, and (4) one current and one graduate of the interventional psychiatry fellowship, and (5) growing interest amongst residency applicants as well as current psychiatry trainees.

**NO. 118**
**THE EFFECTS OF PSYCHOLOGICAL DISTRESS ON ACADEMIC ACHIEVEMENT IN MEDICAL STUDENTS**

*Lead Author: Seoyoung Yoon, M.D.*
*Co-Author(s): Changsu Han, M.D., Ph.D.,M.H.S., Yong-Ku Kim,*

*M.D., Ph.D., Yunhwan Lee, Ashwin A. Patkar, M.D., David C. Steffens, M.D., M.H.S., Ho-Kyoung Yoon, M.D., Ph.D.*

**SUMMARY:**
CONTEXT: Studies suggest that medical students may be more prone to psychological distress, which may affect their academic performance. We aimed to assess the validity and reliability of extant scales for measuring psychological distress in medical students, and examined the relationship between their scores and academic achievement.
METHODS: We surveyed 174 medical students using demographic questionnaires, the Patient Health Questionnaire-9(PHQ-9), Beck Depression Inventory(BDI), Patient Heath Questionnaire-15(PHQ-15), Beck Anxiety Inventory(BAI), and Perceived Stress Scale(PSS). We calculated Cronbach's α for internal consistency, as well as the Pearson's correlation coefficient for test-retest reliability and convergent validity. In order to examine the relationship between psychological distress and demographic variables, we performed independent t-tests, one-way analysis of variance, and Chi-square and binary logistic regressions.
RESULTS: All scales were reliable(Cronbach's α=0.837-0.922, test-retest reliability, r=0.650-0.810) and valid(r = 0.509-0.807) when employed with medical students. Total scores on the PHQ-9, BDI, PHQ-15, BAI, and PSS were significantly higher amongst low academic achievers than amongst high academic achievers($p<0.01$). Depression, high anxiety, and high levels of somatic symptoms were more prevalent in poor academic achievers than in high academic achievers. Similarly, poor achievers were at greater risk of depression and high levels of somatic symptoms than high achievers(OR[95%confidence interval))= PHQ-9: 3.686(1.092-12.439); BDI: 10.775(2.25-51.591); PHQ-15: 3.669(1.272-10.586), $p <0.05$).
CONCLUSIONS: We confirmed that higher psychological distress is related to poor academic achievement when measured through the PHQ-9, BDI, PHQ-15, BAI, and PSS. Early screening of medical students through these scales and providing prompt management to high scorers may not only be beneficial to students' mental health, but also may improve their academic achievement.
KEYWORDS: Psychological distress, medical students, PHQ-9, BDI, BAI, PHQ-15, PSS, academic achievement

**NO. 119**
**INFLUENCE OF CAG REPEAT POLYMORPHISM OF THE ANDROGEN RECEPTOR (AR) GENE ON IMPULSIVE PHENOTYPE AND PSYCHIATRIC SYMPTOMOLOGY IN ALCOHOL DEPENDENT MEN**
*Lead Author: Kapil K. Aedma, M.D.*
*Co-Author(s): Merlin G. Butler, M.D., Ph.D.; Albert B. Poje, Ph.D.; Elizabeth C. Penick, Ph.D; Ann M. Manzardo, Ph.D; Dmitry Meyerovich, M.D.*

**SUMMARY:**
Objective: A common polymorphism of the androgen receptor (AR) gene, located on the X-chromosome, represents variations in the number of CAG nucleotide repeats in exon 1 of the AR gene which impacts AR expression and ultimately androgen sensitivity. Androgen sensitivity has been proposed to influence impulsiveness in males which may impact abuse behaviors and vulnerability towards the development of alcohol dependence. The present study examines the relationship between the number of CAG repeats and alcohol dependence in men and association with impulsiveness and psychiatric symptomology in alcoholism.
Methods: Peripheral blood samples were obtained from 55 adult males (mean age 47±8yrs; range 21-59yr; 41 African-American and 14 Caucasian) from the Kansas City area who met DSM-IV-TR criteria for current alcohol dependence and 30 age-matched African-American control males from a blood collection unit with no self-reported history of alcoholism. Alcohol dependent males were given psychometric tests including the Symptom Checklist-90-R (SCL-90-R), Barratt Impulsivity Scale, version 11 (BIS) and a derived Alcoholism Severity Scale (ASS). Genomic DNA was isolated and CAG repeat length determined by analyzing PCR amplified products using specific primers to generate the polymorphic AR gene fragment. CAG repeat length was compared by diagnosis and correlated with raw scores from SCL-90-R, BIS and ASS among alcohol dependent men using Pearson Correlation and ANOVA controlling for the effects of race.
Results: CAG repeat lengths in our subjects did not differ between alcohol dependent [mean (SD) =15.1 (2.5)] and control males [mean (SD) =16(3.4); $t=1.4$, $p=0.17$] or by race [$t=0.7$, $p=0.5$] and was not related to SCL-90-R or ASS measures among alcohol dependent men. However, a significant inverse correlation was observed between CAG repeat length and BIS motor impulsiveness (1st & 2nd order) scales for Caucasian [$r= -0.6$, $p<0.05$] but not African-American alcoholics [$r= 0.1$, $p=0.5$]. A significant race by repeat length interaction was identified [$F=6.6$, $p<0.01$] for this relationship. CAG repeat length was positively correlated with cognitive complexity scores in African-American [$r= 0.4$, $p<0.05$] but not Caucasian [$r= -0.1$, $p=0.7$] alcoholics.
Conclusions: AR gene CAG repeat length did not influence the risk of alcoholism, drinking behavior or severity of illness in our male subjects. However, racial differences were observed in the relationship between CAG repeat length and impulsivity measures. Decreased impulsiveness among Caucasian males with longer repeat lengths may reflect changes in testosterone sensitivity associated with reductions in AR expression. Impulsiveness among African-American males may be attributable to social, environmental or biological influences unrelated to or minimally influenced by androgen sensitivity. Replicative studies with more participants of both races are needed to confirm and further elucidate these observed associations.

**NO. 120**
**A REVIEW OF THE CHALLENGES OF TREATING BIPOLAR DEPRESSION**
*Lead Author: Steven Aguilar, M.D.*
*Co-Author(s): Roberto Castaños, M.D., Gerald A. Maguire, M.D.*

**SUMMARY:**
Bipolar disorder is a chronic, debilitating mental illness that results in a significant negative impact on quality of life. Patients in the depressive phase of bipolar disorder experience bear the brunt of the burden of this negative impact. Of the estimated 25-50% of patients with bipolar disorder who attempt suicide at least once in their lifetime, the overwhelming majority suffer from bipolar depression. In addition to a greatly increased risk of suicide, patients with bipolar depression have much higher rates of substance use and cardiovascular disease. Despite the

severity of such symptoms, optimizing treatment for bipolar depression has proven difficult. Whereas there exist multiple agents and medication classes for the treatment of acute mania, there are only three FDA-approved agents for the treatment of acute bipolar depression - aripiprazole, olanzapine-fluoxetine combination (OFC) and, most recently, lurasidone. For the maintenance phase of bipolar disorder, aripiprazole (monotherapy or adjunct with lithium or valproate), lamotrigine, lithium, olanzapine and lurasidone (monotherapy or adjunct with lithium or valproate) are available FDA-approved agents. Consensus regarding the treatment of bipolar depression has also proven challenging to achieve. American Psychiatric Association Practice Guidelines for treatment of patients with bipolar disorder have not been updated since 2002. The Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) trial, in showing that the use of antidepressants did not significantly improve symptomatic burden, further highlights the challenges that patients and clinicians face when selecting pharmacological approaches to the treatment of bipolar depression. We present here a brief review and update on strategies to optimize acute treatment and maintenance in patients with bipolar depression. Special emphasis is placed on appropriate diagnosis, effective and novel pharmacotherapy and reduction of disease burden.

**NO. 121**

**THE LONG-TERM EFFECT OF CORONARY ATHEROSCLEROSIS AND APNEA HYPOPNEA INDEX DURING RAPID EYE MOVEMENT ON POSTTRAUMATIC STRESS DISORDER**

*Lead Author: Naser Ahmadi, M.D., Ph.D.*
*Co-Author(s): Nutan Vaidya, MD*

**SUMMARY:**
Background: We recently reported a relation of posttraumatic stress disorder (PTSD) with subclinical atherosclerosis as well as rapid eye movement (REM) apnea hypopnea index (AHI). This study investigated the relation of coronary atherosclerosis measured by coronary artery calcium (CAC), apnea hypopnea index (AHI) during rapid eye movement (REM) with cardiovascular mortality in PTSD.
Methods: Six hundred and thirty four veterans without known CAD (58±11 years of age, 86% men) underwent CAC scanning and overnight polysomnography for clinical indications and their psychological health status (PTSD vs. non-PTSD) was followed for median of 36 month. Multivariable Cox regression analyses were employed to assess the relation of REM AHI, CAC, and their interaction with cardiovascular mortality in PTSD as compared to matched group without PTSD.
Results: During the mean follow up of 36 month, the death rate was higher in the PTSD as compared to non-PTSD (17% vs. 10.4%, p=0.001). Cox regression survival analyses revealed a significant linkage between PTSD and CAC as well as PTSD and REM AHI with cardiovascular mortality. After adjustment for risk factors, the relative risk of cardiovascular mortality was 5.72 (95%CI 2.46-13.34, p=0.0001) in PTSD and CAC>0 as compared to non-PTSD with CAC=0. Similarly, after adjustment for risk factors, the relative risk of cardiovascular mortality was 3.22 (95%CI 1.17-8.85, p=0.02) in PTSD and REM AHI≥30 as compared to non-PTSD with REM AHI<30. The event free survival rate decreased from 97.6% in CAC=0 to 84.9% in CAC>0 which was more prominent in PTSD (86.1% in non-PTSD and CAC>0 vs. 79.4% in PTSD and CAC>0, p=0.001). The event free survival rate decreased from 96.1% in CAC=0 to 87.2% in REM AHI≥30 which was more prominent in PTSD (88.2% in non-PTSD and REM AHI≥30 vs. 84.9% in PTSD and REM AHI≥30, p=0.01). A significant linkage of CAC and REM AHI with increased cardiovascular mortality in PTSD was noted which the relative risk of cardiovascular mortality in PTSD subjects was 6.44 (95%CI 3.64-11.37, p=0.001) in combined CAC>0 and REM AHI≥30 as compared to non-PTSD group.
Conclusion: There is: 1) PTSD is associated with the presence of coronary atherosclerosis which increases cardiovascular mortality, 2) PTSD is associated with the obstructive sleep apnea in REM phase and predicts cardiovascular mortality and 3) There is a significant linkage of PTSD with obstructive sleep apnea in REM phase as well as coronary atherosclerosis, and increased risk of cardiovascular mortality independent of age, gender, and conventional risk factors.

**NO. 122**

**CAPITOL CONFIDENTIAL: HIPPOCRATES, HIPPA, AND HELPING FACT FINDERS IN THE NATION'S CAPITOL**

*Lead Author: Miguel M. Alampay, J.D., M.D.*
*Co-Author(s): Marilou Tablang-Jimenez, M.D.*

**SUMMARY:**
Even before Hippocrates spoke his oath the medical profession has recognized the need for discretion. The dearth of objective tests or studies to assist in behavioral health diagnosis has made confidentiality of special importance to psychiatrists. Although amongst healthcare providers psychotherapists are afforded the strongest safeguards of confidentiality, even this privilege must yield at times to the public welfare. Recent high profile mass shootings by allegedly mentally ill perpetrators have returned questions about these limits to the fore. As the drawing of this line has been traditionally left up to state laws, providers in the nation's capitol – which contains five residency programs training across four jurisdictions (the District of Columbia, Maryland, Virginia, and the Uniform Code of Military Justice) – must be mindful of the respective balances each jurisdiction has struck between the "public good… of transcendent importance" that is behavioral health and the public welfare. This poster examines the development of limits to confidentiality in psychiatry in general. It then compares and contrasts the specific limits to confidentiality applicable in each of the four legal systems providers may encounter in the national capitol area. The determinations made by each may be suggestive of each's respective priorities as well as political and legal cultures.

**NO. 123**

**A LITERATURE REVIEW OF THE IMPACT OF MENTOR/MENTORING PROGRAM ON SUBSTANCE USE IN HIGH RISK YOUTH**

*Lead Author: Narmin Aliji, M.D.*
*Co-Author(s): Kola Alao, M.D.*

**SUMMARY**:
Objectives: This study reviews the effects of mentoring on substance use in youth who come from disadvantaged backgrounds.
Methods: A literature search was performed using PubMed, PsychInfo and a google using key words that identified studies

about the effects of mentoring on substance use in high risk youth. As a result, only four studies met the inclusion criteria. All substance use outcomes were measured by questionnaires. Results: Three out of four studies indicated mentors had positively influenced high risk youth against substance use. Conclusions: Overall, role models/mentoring program can increase attitudes against substance use in high risk youth.

**NO. 124**

**REBOXETINE ADD-ON TO OLANZAPINE: METABOLIC AND ENDOCRINE EFFECTS IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Avi Amrami-Weizman, M.D.*
*Co-Author(s): Rachel Maayan, Ph.D., Irit Gil-Ad , Ph.D., Artashez Pashinian, M.D., ,Camil Fuchs , Ph.D , Moshe Kotler , M.D., Michael Poyurovsky, M.D.*

**SUMMARY:**

We previously demonstrated that the addition of the selective norepinephrine reuptake inhibitor reboxetine attenuates olanzapine-induced weight gain (1). In the present study we sought to determine whether reboxetine's weight-attenuating effect was accompanied by a beneficial effect on metabolic and endocrine parameters relevant to antipsychotic-induced weight gain . Blood samples at baseline and at the end of the 6-week trial were available for 54 participants who participated in previous double-blind, placebo-controlled studies of reboxetine (4 mg BID) addition to olanzapine-treated schizophrenia patients. Fasting glucose, lipid profile, insulin, leptin, cortisol, dehydroepiandrosterone (DHEA), prolactin, and thyroid-stimulating hormone (TSH) were analyzed. The olanzapine/reboxetine group, in contrast to the olanzapine/placebo group, exhibited a reduction in blood triglyceride ($p < 0.05$) and leptin ($p < 0.05$) levels, and elevation in cortisol ($p < 0.05$) and DHEA ($p < 0.008$) levels. No significant between-group differences were detected in the changes in cholesterol, glucose, insulin, TSH, and prolactin. It appears that reboxetine addition resulted in significant improvement of some metabolic and endocrine parameters associated with olanzapine-induced weight gain.
The potential role of reboxetine in the prevention of olanzapine-induced weight gain and cardio-metabolic morbidity merits further large-scale, long-term investigation.

1.Poyurovsky M, Fuchs C, Pashinian A, Levi A, Faragian S, Maayan R, Gil-Ad I.:Attenuating effect of reboxetine on appetite and weight gain in olanzapine-treated schizophrenia patients: a double-blind placebo-controlled study. Psychopharmacology (Berl), 192(3):441-448,2007.

**NO. 125**

**BODY CONTOURING SURGERY AFTER BARIATRIC SURGERY: A STUDY OF COST AS A BARRIER AND IMPACT ON PSYCHOLOGICAL WELL-BEING**

*Lead Author: Arash Azin, B.Sc.*
*Co-Author(s): Arash Azin, B.Sc.,Stephanie E. Cassin, Ph.D., C.Psych., Raed Hawa, M.D., FRCPC..Timothy Jackson, M.D., MPH, FRCSC.,Sanjeev Sockalingam, M.D., FRCPC.,Carrol Zhou, B.Sc.*

**SUMMARY:**

Abstract
Background: Obesity, which impacts one in three American adults is a public health concern in North America. Bariatric surgery is considered the most effective long-term treatment for severe obesity, resulting in sustainable weight loss and improvements in obesity-related comorbidities and psychological distress. However, after the initial rapid weight loss, up to 96% of patients develop excess sagging skin folds. Body-contouring surgery (BCS) can be a solution to excess skin folds post bariatric surgery. Many patients desire BCS, but cost of the procedure may be a limiting factor. This study aims to examine barriers to accessing BCS, and to compare socioeconomic variables (e.g., income, education, employment) and psychological variables (e.g. quality of life [QOL], and psychological distress) between bariatric surgery patients who have received BCS and those who have not.
Methods: In this cross-sectional study, a questionnaire packet was administered to i) patients who received bariatric surgery but not BCS (BS); and ii) patients who received both bariatric surgery and BCS (BS/BCS). The questionnaire included perceived barriers to BCS, socioeconomic barriers, measures of anxiety (Generalized Anxiety Disorder 7-item [GAD-7]), depression (Patient Health Questionnaire 9-item [PHQ-9]), and QOL (SF-36). Data was analyzed using SPSS version 21.0. Comparison tests were conducted using chi-square or Fisher's exact test for categorical data, and either independent samples t-test or Mann-Whitney U test for continuous data depending on data normality. Statistical significance was set at a p-value of $<0.05$.
Results: Amongst the 58 patients participating in the study, 93.1% of patients reported having excess skin folds. Of this sample 95.4% desired BCS and the majority (87.8%) of this subsample identified cost as the major barrier to access. No statistically significant difference was found between the BS and BS/BCS group in terms of socioeconomic variables (income, education, employment). The mean scores on the GAD-7 ($6.08 \pm 5.97$ vs. $3.50 \pm 3.10$, $p=0.030$) and PHQ-9 ($6.40 \pm 6.77$ vs. $2.40 \pm 2.37$, $p=0.002$) were significantly higher for the BS versus BCS/BS group. BCS/BS group patients had significantly higher SF-36 physical health component scores ($56.80 \pm 4.88$ vs. $49.57 \pm 8.25$, $p = 0.010$). There was no significant difference between the BCS/BS and BS groups in terms of the SF-36 mental health component scores ($45.61 \pm 15.06$ vs. $46.97 \pm 10.08$, $p=0.786$).
Conclusions: The results confirmed that bariatric surgery patients who desire BCS post-surgery perceive cost as a major barrier. Patients undergoing BCS may experience improved physical quality-of-life but not mental quality-of-life; however, BCS may improve specific aspects of psychological distress, such as aspects of depression and anxiety. Further research is needed to replicate these findings in larger samples.

**NO. 126**

**EFFECT OF GENDER REASSIGNMENT HORMONE THERAPY ON COGNITIVE FUNCTIONS**

*Lead Author: Evalinda Barron, M.D.*
*Co-Author(s): Santana Daniel Ph.D.*
*Salin J. Rafael M.D., Ph.D.*

**SUMMARY:**

Background: Transsexualism is defined as the belief in which an individual identifies with the opposite gender to their biological sex. Both the neurobiology related to transsexuality, how hormone administration affects the functioning of the brain structures involved in gender identity are still unknown. However, it has been found that neuropsychological tests transsexuals have

scores corresponding to the genus verbal functions identified yet know the change that occurs with hormone reassignment therapy Hypothesis: If hormone therapy reassignment transsexual with conjugated estrogens administered for six months, have an effect on the neurophysiology of these subjects, then we will find changes in verbal memory, increased fluidity of language, visuospatial orientation in Neuropsi test. Primary objectives: Distinguish the changes in verbal memory, language and visuospatial orientation after hormonal therapy reassignment. Methodology : Six subjects diagnosed with gender identity disorder according to DSM IV- TR, who met eligibility criteria were recruited Harry Benjamin was includedI, Neuropsi attention and memory test was applied . Was administrated hormone reassignment therapy with conjugated estrogens (0.625 mg / d) and retest was performed at 24 weeks. Statistical analysis: An Kolmogorov - Smirnov test was used to check normality , then a general linear model for repeated measures to compare each of Neuropsi variables , at three and six months, with the above procedure also could be observed differences in hormone levels at rest, during the same above period ; well as an analysis of Pearson correlation between hormone levels , and a general linear model Results: In the case of executive functions decline of total test points visual detection of digits, which sustained attention of the subjects, the increase in scores on non-verbal fluency. There is a decrease in regression digit score that assesses working memory and verbal memory. A negative correlation between estradiol levels and score buckets in progression, visual detection of digits, category formation and stroop interference, a direct correlation between testosterone levels and face recognition score. Discussion: From these results we can see that there is a clear change in executive and memory transsexual women patients who undergo hormonal treatment with conjugated estrogens functions. A correlation analysis between the levels of serum sex hormones and neuropsychological variables , the literature has been seen that not necessarily correlate serum hormone levels with probable brain levels or activity may have on neuronal receptors was performed , but interesting results . Conclusions: A longitudinal pilot study that allows us that the results are important for direct relationships found, opening an interesting panorame in the physiology of mental functions

**NO. 127**

**EXPLORING THE RELATIONSHIP BETWEEN PLACEBO AND NOCEBO EFFECTS IN A RCT OF TREATMENTS FOR HYPOCHONDRIASIS**

*Lead Author: Anya Bernstein, M.D.*
*Co-Author(s): Arthur J. Barsky, M.D., David K. Ahern, Ph.D., Brian Fallon, M.D.*

**SUMMARY:**

BACKGROUND: Placebo and nocebo effects are powerful determinants of treatment response to pharmacotherapy. However few studies have examined the interrelationship of these two phenomena. OBJECTIVES: To explore the relationship between placebo effect and nocebo effect in a population of patients with hypochondriasis treated with placebo. Specifically, to examine how baseline depression, anxiety, somatization and treatment expectations affect the placebo and nocebo responses in this population. HYPOTHESES: In patients with hypochondriasis taking placebo, higher baseline level of anxiety, depression and somatization predict greater side effects and smaller clinical improvement. In these subjects, an inverse statistical association will be found between improvements in hypochondriasis on the one hand, and the incidence of treatment emergent side effects on the other. More positive treatment expectations at inception will predict greater improvement in hypochondriasis, and more negative treatment expectations at inception will predict a greater incidence of side effects. METHODS: Secondary analyses of a randomized, double blinded, placebo controlled trial of treatment of hypochondiasis conducted at Brigham and Women's Hospital and Columbia University/ New York State Psychiatric Institute. This was a 24-week trial involving 195 subjects who were randomized into one of the four treatment arms: fluoxetine, cognitive behavior therapy (CBT), fluoxetine + CBT, and placebo. Measures of hypochondriasis and treatment emergent side effects were obtained at baseline and after 12 and 24 weeks of treatment. The measure of treatment improvement was the change in Whiteley index score from baseline to 12 weeks. The measure of side effects was physician-ratings of the emergence of somatic symptoms attributable to the pill. Depression, anxiety, somatization, and treatment expectations were measured at baseline: depression was assessed with the Beck Depression Inventory, anxiety was evaluated with the Spielberger State Trait Anxiety Inventory, and somatization was assessed with the Personal Health Questionnaire 15. Treatment expectations were measured by self-report at baseline. CONCLUSION: We expect that an inverse relationship exists between placebo and nocebo effects in this population. That is, increasing levels of depression, anxiety and somatization are prospectively associated with decreasing treatment benefit and with increasing treatment side effects. We expect that more positive expectations of pharmacotherapy are prospectively associated with greater treatment benefit and fewer side effects. Knowing the predictors of placebo and nocebo response and their relationship will enable clinicians to tailor medical interventions in order to amplify the therapeutic benefit and minimize the occurrence of side effects.

**NO. 128**

**CEREBELLAR AND PREFRONTAL TRANSCRANIAL DIRECT CURRENT STIMULATION TO IMPROVE COGNITION IN PATIENTS WITH BIPOLAR DISORDER: PRELIMINARY SPECT FINDINGS**

*Lead Author: Francesco Saverio Bersani, M.D.*
*Co-Author(s): Laura Bernabei, Massimo Biondi MD, Wanda K. Calò MS, Roberto Delle Chiaie MD, Alessandra Corrado MD, Francesco De Michele MD, Mauro Liberatore MD, Francesco Macrì MD, Valentina Megna MD, Amedeo Minichino MD, Graziella Olla, Martina Primavera MS, Francesco Spagnoli, Ines Taddei MD, Lucilla Vergnani MD*

**SUMMARY:**

INTRODUCTION: It has now become apparent that the cerebellum is critical for many functions other than the coordination of movement, and is engaged also in the regulation of cognition and emotion; Andreasen's hypothesis of "cognitive dysmetria" suggested that a general dyscoordination of mental processes could be the consequence of prefrontal-talamic-cerebellum circuit disruption. One study recently found a cognitive facilitation by cathodal transcranial Direct Current Stimulation (tDCS) of the cerebellum in healthy people; the aim of the current study is to improve the cognitive functioning of patients affected

by Bipolar Disorder (BD) in the euthymic phase of the disease using tDCS applied to the left dorsolateral prefrontal cortex (DLPFC) (anode) and to the right cerebellar cortex (cathode), and to assess the modifications of brain perfusion through pre- and post-treatment cerebral Single-Photon Emission Computed Tomography (SPECT) with 99mTc-HMPAO.
METHODS: 10 BD patients in the euthymic phase of the disease under pharmacological treatment were enrolled in the study. Patients received 2 mA tDCS for 20 min for 15 days (Monday–Friday on three consecutive weeks). Before (T0) and after the stimulation (T1) patients underwent the neuropsychological assessments (through the administration of Rey Auditory Verbal Learning Test, Wisconsin Card Sorting Test, Rey-Osterrieth Complex Figure [ROCF], Trail Making Test [TMT], Digit Span and Stroop Effect) and cerebral SPECT evaluation. A software application (Neurogam), was used to evaluate the SPECT brain images providing statistical significance of the results by comparing them to a normal age matched database.
RESULTS: The scores obtained in the ROCF Immediate and Delayed Recall significantly ($p<0.01$) improved after the treatment. Patients showed significantly ($P<0.05$) increased perfusion in Brodmann areas 23 (right posterior cingulate cortex), 24 (left anterior cingulate cortex), 9, 10 (left prefrontal cortex), 7 (bilateral parietal cortex), and in bilateral cerebellum.
DISCUSSION: The cerebellum is linked to the cerebral cortex via two-stage feedforward and feedback
cortico-cerebellar systems involving association areas such as prefrontal cortex and posterior parietal cortex which are known for their roles in higher cognitive functions. The present study preliminarily indicates that concomitant tDCS stimulation of DLPFC and cerebellum leads to significant improvements in cognitive functions and to increased perfusion of critical brain areas, supporting the idea of a role of cerebellum in the cognitive and mental processes of BD.

**NO. 129**

**CONTEXT PROCESSING DISRUPTION IN THE PREFRONTAL-PARIETAL NETWORK IN A MONKEY MODEL FOR SCHIZOPHRENIA**

*Lead Author: Rachael K. Blackman, Ph.D.*
*Co-Author(s): Matthew V. Chafee, Ph.D., David A. Crowe, Ph.D., Sofia Sakellardi, M.S.*

**SUMMARY:**

Introduction/Hypothesis: The neurophysiological underpinnings for cognitive dysfunction in schizophrenia have not been well characterized at the single cell level. Context processing dysfunction is one cognitive deficit seen in the schizophrenia population as evidenced by patient performance on context processing tasks. Context processing involves using prior contextual information stored in working memory to adaptively control later behavior. We was hypothesized that failure of prefrontal cortical neurons to code and transmit contextual information within prefrontal cortex and to other cortical areas leads to the context processing dysfunction observed in schizophrenia.
Methods: In order to study context processing deficits at the single cell level, we used a pharmacological model for the disease in monkeys. The N-methyl-D-aspartate receptor (NMDAR) antagonist phencyclidine (PCP) was used as the pharmacological model. We trained two monkeys on the Dot Pattern Expectancy (DPX) task, a variant of the AX-CPT (context processing task), where each trial two dot patterns (a cue followed by a probe) are presented sequentially, separated by a delay. The identity of the cue provided the contextual information each trial. Single cell recordings of neurons in the prefrontal (PFC) and parietal (PAR) cortex were collected simultaneously while the monkeys performed the DPX task. On alternating days, the monkeys received either an injection of saline or PCP (0.25-0.3 mg/kg) prior to recording. Spike data from >650 neurons/condition were collected. Populations of neurons with activity encoding the context signal (cue) were identified and characterized based on their activity during the cue and the probe presentation periods. Decoding and linear regression were performed to quantify strength and transmission of information about the cue coded by activity in the network.
Results: Monkeys committed a similar pattern of errors under the PCP condition as schizophrenia patients performing the same task. Context related signals were observed in both PFC and PAR cortex under both the saline and PCP conditions during the cue and comprised 10-16% of neurons recorded in each area during both the cue and the probe periods. PCP more profoundly attenuated the persistent encoding of the cue associated with working memory in PFC compared to PAR. In addition, PCP changed the timing of the cortical interactions observed between PFC and PAR such that less top down (PFC to PAR) transmission of task-related information was observed. Finally, following PCP, failure to maintain context information in PFC was highly predictive of behavioral errors on a trial-by-trial basis.
Discussion/Conclusions: We show: 1.) Schizophrenia-like context processing deficits can be replicated using PCP in monkeys. 2.) Context processing deficits reflect disrupted within cortical area and corticocortical communication in prefrontal networks. 3.) Neural activity can be used to predict errors.

**NO. 130**

**TREATMENT OF VIOLENT ANTISOCIAL PERSONALITY DISORDER WITH CLOZAPINE: AN EFFECTIVE THERAPEUTIC STRATEGY IN A UNITED KINGDOM HIGH SECURITY HOSPITAL**

*Lead Author: Darcy Brown*
*Co-Author(s): Mrigendra Das, M.D.; Finatan Larkin, M.D.; Jose Romero-Ureclay, M.D.; Callum Ross, M.D.; Samrat Sengupta, M.D.; Morris Vinestock, M.D.*

**SUMMARY:**

Objective
The treatment of personality disorder is multifaceted with limited evidence to suggest that some pharmacological interventions are of benefit. A number of small studies have demonstrated the positive effect of clozapine in borderline personality disorder and have indicated its potential anti-aggressive properties. There is no published literature on treatment of antisocial personality disorder with clozapine. We present a case series of 7 patients with primary antisocial personality disorder and high psychopathic traits treated with clozapine. The patients did not have co-morbid schizophrenia and all have a significant history of serious violence. They are all currently detained under the Mental Health Act in a UK high-secure hospital.
Methods
Case notes and health records were reviewed retrospectively for records of violence, aggression and also positive factors

such as engagement with staff. Clinical Global Impression (CGI) scores were also formulated on case note review. The treating psychiatrists reported improvement in specific symptom domains (cognitive-perceptual, impulsive-behavioural dyscontrol, affective dysregulation). Metabolic parameters were used to analyse the physical effects of clozapine commencement. Clozapine serum plasma levels were sampled and concurrent medication was noted.
Results
All patients had index offences of serious violence such as homicide and grevious bodily harm. All seven patients showed significant improvement on clozapine. Clozapine showed to benefit all symptom domains; in particular, it improved the severity of impulsive behaviour, mood lability and anger. Clozapine also demonstrated anti-aggressive properties as it reduced the number of violent incidents committed by six of the seven patients. The remaining patient did not have incidents before or after clozapine treatment, but reported reduction in frequency and severity of violent thoughts. The risk of violence toward others reduced for all patients after the commencement of clozapine and three of the seven patients were subsequently moved to lower dependency wards. Clozapine serum levels for 6 of the 7 patients were in the range 150-350 ng/ml.
Conclusion
The study results show that clozapine is of benefit among patients with antisocial personality disorder. It has shown to reduce the clinical severity of their disorder, particularly in symptom domains of impuslsive-behavioural dyscontrol and affective dysregulation, and significantly reduce levels of aggression and violence. To our knowledge this is the first account of clozapine being used in antisocial personality disorder and indicates the need for further investigation in this patient sample. An important factor noted by the authors, is that the positive results demonstrated in this patient sample were achieved on very minimal doses of clozapine with serum levels below 350ng/ml. The mechanisms by which clozapine may be effective in antisocial personality disorder is discussed.

**NO. 131**

**NEURAL SIGNATURES OF STUTTERING: A SERIES OF ALE META-ANALYSES**

*Lead Author: Kristin Budde, B.A.*
*Co-Author(s): Daniel S. Barron, B.S, Peter T. Fox, M.D.*

**SUMMARY:**

Persistent developmental stuttering (PDS) affects 1% of adults and remains poorly understood despite a large body of neuroimaging literature. To synthesize this literature, we present a series of coordinate-based meta-analyses that apply improved activation likelihood estimation (ALE) to a robust 17-paper dataset. We performed three analyses: 1) large-scale meta-analysis of all dataset papers, which revealed bilateral auditory deactivations and consistent right insula activations in PDS patients; 2) a between-group contrast targeting differences between PDS and fluent controls, in which the red nucleus was found to be consistently more active in controls than in PDS patients; and 3) a within-group contrast targeting differences in fluency within PDS , which revealed consistent right auditory cortex activation during fluency and left cerebellar activations during dysfluency. These findings expand and refine the 'neural signatures' of stuttering proposed by Brown et. al. in 2005.

**NO. 132**

**COMPARISION OF SERUM MICRORNA LEVELS BETWEEN DEPRESSED PATIENTS AND HEALTHY CONTROLS**

*Lead Author: Mehmet Akif Camkurt*
*Co-Author(s): Şenel Acar M.D., Ayşegül Görür Ph.D., Serkan Güneş M.D., Yunus Kıllı M.D., Lülüfer Tamer M.D.*

**SUMMARY:**

Objective: Objective of this study is to identify whether microRNAs (miRNA) could be potential biomarkers for major depressive disorder (MDD). Method: The blood samples (BS) of 50 patients and 41 healthy controls(HC) collected from individuals who admitted to Mersin University Teaching Hospital. To identify better diagnosis and eliminate deficiency of Hamilton Depression Rating Scale (HDRS) we used both HDRS and Montgomery Asberg Depression Rating Scale. For accurate phenotyping, patients who met diagnostic criteria for major depression according to DSM IV, HDRS score above 17, has no comorbid psychiatric and medical condition, never used psychiatric drugs before and didn't take any medication for 1 month prior to BS taking period included. Subtypes like psychotic, melancholic, anxious, seasonal and atypical excluded. HC was also consisted of individuals who has no history of psychiatric and chronic medical condition, didn't take any drugs for 1 month prior to BS taking period and whose HDRS score was under 7. We identified miRNAs related with genes that have been shown to be expressed similarly in both prefrontal cortex and peripheral blood. We hypothesized that some of these miRNAs should be expressed differentially between MDD patients and HC and could be a biomarker for MDD. BS which drawn in EDTA tubes were accomplished by centrifugation at 4000 rp. RNA was isolated using the High Pure miRNA Isolation Kit. cDNA and preamplification protocols were obtained from the isolated plasma miRNAs. Real-time qPCR was used to simultaneously quantitate the expression of 372 miRNAs. Mann Whitney U test was used for statistical analysis. Results: Mir320a was significantly down regulated and mir 451a was significantly up regulated among MDD patients. Conclusion: MiRNAs are small non-coding 16-22 nucleotide long RNA transcripts and they usually point mRNA's to degrade and provide them from translation.To our current knowledge it is the first study investigating miRNAs as potential biomarkers for MDD. We found mir320a down regulated between MDD group and HC. Mir320a is predicted to be related with lots of genes which include GRIN2A and DISC1. Previous studies showed GRIN2A was upregulated in both MDD patients and suicidal patients. Down regulation of mir320a is predicted to be related with upregulation of GRIN2A. A genetic linkage study demonstrates DISC1 as a potential target for MDD. According to our findings and previous literature plasma mir320a levels could be indicator of GRIN2A related processes in prefrontal cortex of depressed patients. We found mir451a upregulated among depressed patients. A previous study showed ketamine treatment reduces mir451a levels. In recent years ketamine is predicted to be one of the rapid acting potential antidepressant treatment. Based on acting mechanism of ketamine mir451 could be a marker for treatment response. Our study demonstrates the possibility of miRNAs as diagnostic and prognostic biomarkers for depression.

**NO. 133**

**PROBLEMATIC SEXUAL BEHAVIOR IN A PATIENT OF 48, XXYY SYNDROME: A CASE REPORT**

*Lead Author: Subhash Chandra, M.B.B.S., M.D.*

**SUMMARY:**

A 17 year-old-boy with a diagnosis of 48, XXYY syndrome, was under our care for suicidal ideation, and auditory hallucination. He had been in problem, due to his sexual behaviors since age 9. A MEDLINE search for, "Sexual behavior in 48, XXYY syndrome" yielded case reports describing psychiatric disturbances, with very little discussion on their sexual behavior. Their engagement in problematic sexual behavior can be due to low intelligence or may be another behavior pattern of 48, XXYY syndrome. Differentiating normal teenage sexual behavior from a risky sexual behavior in these patients is difficult and addressing them can be very challenging. Observation of the repeated pattern of involvement in risky sexual behaviors, suggests high likelihood of they turning into sex offenders if not intervened timely.

**NO. 134**

**A SURVEY STUDY OF THE SATISFACTION AND ATTITUDE OF THE KOREAN PSYCHIATRISTS TOWARDS ANTIPSYCHOTIC POLYPHARMACY**

*Lead Author: Jisoon Chang, M.D.*
*Co-Author(s): Bongseog Kim, M.D., Ph.D.*

**SUMMARY:**

INTRODUCTION

Antipsychotic polypharmacy (AP) to treat patients with schizophrenia and schizoaffective disorder is commonly prescribed in clinical practice; however, its supportive evidence is scarce. This study aimed to survey South Korean psychiatrists' rationale for AP.

METHODS

Psychiatrists were interviewed using a newly developed, semi-structured questionnaire inquiring about AP attitudes and behaviors, including frequency of use, rationale, concerns, and preferred combinations.

RESULTS

Compared to the highly prescribing AP group (≥ 10 of patients a day, HAP group), the lowly prescribing AP group (≤ 9 of patients a day, LAP group) tended to work in a university general hospital, publish more research papers a year, attend more psychiatric conferences, prescribe more 2 atypical antipsychotic combinations, and have more satisfaction with AP. Psychiatrists were satisfied with the therapeutic responses of AP (rating, 6.4 ± 1.5). AP was mostly prescribed because of reduced target symptoms, refractory to monotherapy with clozapine, and speed up effect. Psychiatrists felt concerned about AP (rating, 4.7 ± 1.6), mostly due to the potential for higher chronic adverse events, lack of evidence base, and higher total dosage of AP. Common adverse effects of prescribing AP were sedation, weight gain, and extrapyramidal adverse effects. However, there were no significant statistical differences between HAP and LAP groups.

CONCLUSIONS

In South Korean psychiatric practices, the LAP group has seemed to pay close attention to AP more than the HAP group does. However, both the HAP and LAP groups shares similar attitudes toward satisfactions, concerns, and preferred combinations of AP.

**NO. 135**

**RELATION OF RECENTLY INGESTED MARIJUANA TO MOOD SYMPTOMS IN RECENTLY ADMITTED INPATIENTS WITH BIPOLAR OR PSYCHOTIC DISORDER DIAGNOSES**

*Lead Author: MIchael Colin, M.D.*
*Co-Author(s): Yang Xu, MD., Igor Galynker MD. Ph.D., Zimri Yaseen MD.*

**SUMMARY:**

Background:

Illicit, as well as legal use of Marijuana has long been a controversial and highly debated subject world-wide, and particularly in the United States in recent years. The general public is exposed to a variety of different and often conflicting messages about Marijuana use, and this has garnered speculation about the properties of the drug, its potential benefits, and the health concerns surrounding the occasional and prolonged use of this substance. As marijuana becomes legally available in some parts of the US, the use of the drug may potentially become more socially acceptable and pervasive. This creates a need for a thorough consideration and investigation of the diverse properties and potential health hazards Marijuana use, particularly as it relates to more vulnerable populations that may sustain a detrimental effect following its consumption.

Methods:

In this study, which is currently ongoing, data is collected once inpatients are psychiatrically stabilized. Diagnoses, based on DSM-IV –TR criteria, are given by the primary treatment -team on the inpatient unit. Beck Depression Inventory (BDI) and Young Mania Rating Scale (YMRS) are administrated by trained research clinician to measure the mood states of participants and the extent of manic symptoms. Cannabis Use Disorder Identification Test (CUDIT) and Marijuana Effect Expectancy Questionnaire (MEEQ) are self-rated by patients to screen for cannabis use disorder and to measure the subjective experience of marijuana use, respectively. Recall bias is eliminated by including only inpatients with a positive toxicology report for cannabis in the analysis. Patient s are recruited by screening admission records from a diverse patient population in an urban inpatient unit, and stratified into predominantly mood disorder vs. psychotic disorder criteria.

Results:

In the interim analysis, thirty participants were evaluated, out of which thirteen had a urine toxicology report positive for cannabis and seventeen did not. Preliminary findings suggest a significant positive correlation (r= 0.5 p=0.03) between scores on the YMRS and CUDIT among patients with Cannabis positive urine toxicology). No significant correlation was found in either group with sores on the AUDIT or on the BDI.

Conclusion:

Recent Marijuana use appears to be associated with elevated YMRS but not BDI scores. Level of past year MJ use did not associate with current manic symptoms when there was no recent use. Negative findings may be a result of a type 2 error.

**NO. 136**

**SPONTANEOUSLY EXERCISING PATIENTS WITH SCHIZOPHRENIA, SCHIZOPHRENIFORM, AND SCHIZOAFFECTIVE DISORDERS**

*Lead Author: Danielle Dahle, M.D.*

*Co-Author(s): Douglas L. Noordsy, M.D.*

**SUMMARY:**
Individuals with schizophrenia are less physically active than the general population and are at high risk for chronic medical conditions associated with inactivity, shortening life expectancy by 13 to 30 years. Clinical studies have demonstrated therapeutic effects of physical exercise among people with schizophrenia. Several mechanisms for how exercise might exert an effect have been suggested including biochemical changes, physiological changes, and psychological changes. There is some evidence to suggest that exercise helps alleviate relatively treatment refractory negative symptoms in schizophrenia. However, there is little evidence on factors that facilitate regular exercise among people with schizophrenia, or on factors that may sustain motivation over a lifetime.
We describe a prospective study using a semi-structured interview to explore motivational parameters associated with regular exercise and using Visual Analog Scales (VAS) and the Subjective Exercise Experiences Scale (SEES) to explore the effects of individual exercise sessions in a population of spontaneously exercising individuals with schizophrenia spectrum disorders.

We will recruit 40 individuals who meet DSM-IV criteria for schizophrenia, schizophreniform, or schizoaffective disorder and report exercising >30 minutes, 3 times a week. After obtaining informed consent, a semi-structured interview is conducted regarding their exercise history and motivations. Participants then take home the VAS and SEES (constructed to measure positive, negative, cognitive, and mood symptom domains) to rate the intensity of symptoms before and after 3 exercise sessions on their own. The data collected from the semi-structured interview will be analyzed by modified content analysis. Mean values pre- and post- exercise will be calculated for each item of each scale (VAS and SEES).
Preliminary results suggest that participants' primary motivation for exercising was their own self-image ("to lose weight", "get in shape", "to look good"). Although mental health was not the primary motivation for most participants, many participants reported that exercise was an important method of coping, especially with anxiety. Most participants had participated in sports as children and continued to enjoy similar/related activities as adults.
After completing data collection and analyses, we will identify those factors that spontaneously exercising individuals with schizophrenia retrospectively identify as important in motivating their regular exercise. We will then identify symptom domains that participants prospectively rate as most improved or worsened in response to exercise. We will discuss the implications of these findings for designing clinical trials and interventions aimed at increasing physical exercise among people with schizophrenia.

**NO. 137**

**QUITTING SMOKING IN THE FACE OF CO-OCCURRING ACUTE PSYCHIATRIC AND ADDICTIVE DISORDERS: WHAT IS POSSIBLE?**

*Lead Author: Smita Das, M.D., M.P.H., Ph.D.*
*Co-Author(s): Norval Hickman, Ph.D., M.P.H.,Judith J. Prochaska, Ph.D., M.P.H.*

**SUMMARY:**
Objectives: Individuals with psychiatric and addictive disorders have two- to four-fold higher rates of smoking than the general population and are estimated to consume nearly half the cigarettes sold in the US. The health consequences are significant, with an estimated shortened lifespan of 25 years. Mental health and addiction treatment programs have traditionally overlooked tobacco as a treatment target with concern that efforts to quit smoking may threaten mental health recovery or sobriety. Herein, relative to usual care, we evaluated the efficacy of a tobacco intervention initiated in inpatient psychiatry, focusing on the subsample with substance use disorders (SUD) in addition to mental illness. Outcomes included tobacco abstinence and changes in substance use from baseline to 12-month follow-up.
Methods: Participants were recruited in-hospital from two 100% smoke-free locked acute psychiatry units in the San Francisco Bay Area (one academic and one public) and randomized to intervention or usual care. The current analysis centered on participants with a SUD as defined by a positive drug abuse screening test (DAST) score or positive alcohol use disorders identification test (AUDIT) score at baseline. Intention to quit smoking was not required to participate as the intervention was tailored to readiness to quit smoking and included a computer program, counseling, and nicotine replacement therapy (NRT). The usual care condition received NRT during hospitalization only and brief advice to quit. The outcome of interest in this study was verified 7-day point prevalence abstinence at 12-months post baseline, past 30-day reports of alcohol and illicit drug use, and change in the Behavior and Symptom Identification Scale (BASIS)-24 substance abuse subscale.
Results: Of the N=324 original study participants, 216 (67%) had a SUD. Participants with positive SUD were 66% male, 36% non-Hispanic white, with a mean age=39 (SD=13). At 12 months, there was a significant effect of intervention versus usual care on smoking cessation (22% quit versus 11%, RR=2.01, 95%CI=[1.05, 3.83], p=0.03). There was no significant difference in change in the BASIS-24 substance abuse subscore at 12 months based on treatment group. At 12 months, 22% of the respondents reported total abstinence from alcohol and drugs in the last 30 days with no significant effect of intervention on this measure.
Conclusions: A tobacco treatment intervention initiated during inpatient psychiatric hospitalization with smokers with co-occurring mental illness and SUD was successful in aiding smoking cessation and did not adversely impact alcohol and illicit drug use. Future treatments may look to address alcohol, tobacco, and drugs (ATOD) in one integrated intervention given the high rate of tobacco and SUD disorders among persons with mental illness to better provide comprehensive care for a group at greater risk of smoking related morbidity and mortality.

**NO. 138**

**LANGUAGE IN SCHIZOPHRENIA: WHAT WE CAN LEARN FROM TEXT ANALYSIS**

*Lead Author: Sasha Deutsch-Link, B.A.*
*Co-Author(s): Cindy Chung, Ph.D., Philip Corlett, Ph.D., Sarah Fineberg, M.D., Ph.D., James Pennebaker Ph.D.*

**SUMMARY:**
Language in Schizophrenia: What We Can Learn from Text

Analysis
Sasha Deutsch-Link, B.A., Sarah Fineberg, MD/Ph.D., Cindy Chung Ph.D., James Pennebaker Ph.D., Philip Corlett, Ph.D.
Background: People living with schizophrenia demonstrate broad language and communication deficits. Prior research has focused on changes in thought and speech form, as well as problems in comprehension. In this study we expand upon our understanding of the use of language by people with schizophrenia by using a novel method for single word level analysis to break down language to it's most fundamental components.
Study Design/Methods:We examined essays by 4 groups of authors:people with schizophrenia (n=77), family of people with schizophrenia without diagnosis (n=25), psychiatric controls (mood/anxiety, n=29) and non-psychiatric controls (college students, n=418). We compiled all texts by group and entered them into a word cloud generator provided by Tagxedo (http://www.tagxedo.com/), which portrays words based on their frequency in a given text sample. Linguistic Word Inquiry (LIWC) 2007 software calculated percentage word type in each sample for parts of speech and pre-defined themes. Multiple ANOVAs were used to examine group differences followed by Tukey post-hoc. We determined our standard of significance at a level of $p < .05$.
Results:
Mood Disorders: Analyses of mood disorder texts replicated previous findings with increased affect, sad, and negative emotion words and use of the word "I". (See Figure 1)
Mental Illness: We examined group differences between those living with mental illness (mood disorder and schizophrenia) and those not (family members and college students) to determine whether mental illness explained differences and found only one category that differed significantly – achievement. (See Figure 4)
Schizophrenia and Family Members: We also found several categories in which people with schizophrenia and family members shared common features. For many of these features, such as use of articles and pronouns and theme words related to religion, health and hearing, family members tended to fall in between patients and college students. (See Figure 5)
Summary/Conclusions: We successfully replicated previous findings (increased negative affect and self-reference) in the mood group. Mental illness as a category in our sample (schizophrenia and mood disorder groups) did not explain many of the significant differences; only "achievement". This may reflect worries about difficulties in psychosocial arenas for these people. People from families with schizophrenia (patients and their undiagnosed family members) differed from healthy controls across a wide array of variables. For several language features, family members have an intermediate phenotype. Previous work has suggested family members may have high schizotypy, and we suggest that this group of language features may represent a marker of the schizotypal dimension.

**NO. 139**
**PILOT COMPARISON OF PUBERTAL DEVELOPMENT AND DISGUST SENSITIVITY IN ADOLESCENTS WITH ANOREXIA NERVOSA**
*Lead Author: Amanda Downey, B.A.*
*Co-Author(s): Tom Hildebrandt, Psy.D.*

**SUMMARY:**
INTRODUCTION: Anorexia Nervosa (AN) is a serious mental illness whereby patients have an intense fear of gaining weight with lack of regard for the seriousness of their malnutrition. Additionally, AN is the most fatal of all mental disorders, and patients face many long-term health risks. While adolescence coincides with enhancement of the hyopothalamic-pituitary-gonadal (HPG) axis, starvation secondary to AN has the distinct effect of suppressing this axis. Despite the implication of ovarian hormones in AN, little research has been done to see whether abnormal ovarian hormone levels may influence the high disgust response reported among patients with AN.
OBJECTIVE: To assess the tanner stage (stage of pubertal development) in adolescent women with AN to determine if suppression of the HPG axis has differential effects on disgust sensitivity.
METHODS: 13 female adolescents between the ages of 12 and 22 who are diagnosed with AN and who have a BMI of less than 18.5 have undergone a short assessment of their primary and secondary sexual characteristics to determine pubertal development using the tanner scale. They were administered the Disgust Scale-Revised and will have serum taken to the lab for analysis.
RESULTS: Data collection is ongoing. Multiple regression analysis will examine the interaction of tanner stage and ovarian hormones with the prediction that at different levels of pubertal development estradiol will have a unique influence on disgust sensitivity.
CONCLUSIONS: By demonstrating a link between sex hormones and AN, researchers may be able to use pharmacotherapy in the treatment and alleviation of patient's symptoms and may be able to reverse long-term negative consequences of AN. It remains unclear if dysregulation of hormonal systems is a precursor to or effect of the disease, warranting further study.

**NO. 140**
**IMPACT OF GENERAL SELF EFFICACY ON EFFECTIVENESS OF MINDFULNESS TECHNIQUES ON AN INPATIENT PSYCHIATRIC UNIT**
*Lead Author: Alycia F. Ernst, B.A.*
*Co-Author(s): Dale A. D'Mello, M.D., Brittany C. Fields, B.S., Connie L. Gamage, MT-BC.*

**SUMMARY:**
Introduction: "Mindfulness," described as "intentionally bringing one's attention to the internal and external experiences occurring in the present moment," has proven utility in the treatment of a variety of disorders, including chronic pain, depression, and anxiety. "Perceived self-efficacy," a prospective and operative construct that seeks to quantify personal agency, has been shown to correlate with better health, higher achievement, and better social integration. The purpose of this study is to examine the immediate effect of a mindfulness breathing exercise on reducing symptoms of depression and anxiety in an in-patient psychiatric population, as well as to examine the predictive value that a Generalized Self-Efficacy (GSE) score has on the success of such mindfulness techniques. We hypothesized that even a one-time, 7-minute breathing meditation would be helpful in reducing patients' subjective depression and anxiety, and that those with a higher GSE score would derive even greater reduction in symptoms.
Methods: This was a prospective study employing primary data

collection by patient survey, which included patients on the Adult Psychiatric Unit at St. Lawrence Hospital. Participants deemed capable by unit staff were invited to take part in twice-weekly relaxation therapy sessions run by the unit's activity therapist. At each session, the unit activity therapist administered a 7-minute breathing meditation that she had developed. To begin, the GSE Scale was administered, with two survey lines included as an addendum asking patients to rate their depression and anxiety on a scale of 1-10 both pre- and post-intervention. Primary outcome measures were reduction in numerical depression and anxiety ratings after the intervention, as well as correlation of GSE score to this reduction.
Results: 30 subjects participated in the study. The breathing intervention and GSE score served as independent variables, while the depression and anxiety scores served as dependent variables. Our results showed a significant negative correlation between GSE score and post-intervention depression and anxiety scores. On average, subjects experienced a 1.12 point reduction in depression and a 1.72 point reduction in anxiety after the intervention. Linear progression analysis demonstrated that with every unit increase in GSE score, the post-depression score decreased by 0.107. Furthermore, paired t-test demonstrated a statistically significant predictive relationship between GSE score and reduction in anxiety score.
Conclusion: Even a short, 7-minute breathing meditation utilized in an inpatient setting can be effective at reducing patients' depression and anxiety symptoms. Furthermore, the General Self-Efficacy Scale serves as a useful predictor in determining which patients may derive the greatest benefit in terms of reduction in anxiety symptoms.

**NO. 141**

**SELF-MONITORING IN MULTI-STATE RECURRENT NEURAL NETWORKS CAN GUIDE STATE TRANSITIONING AND PROVIDE A MECHANISM FOR COMMUNICATION BETWEEN NETWORKS**

*Lead Author: Sean Escola, M.D., Ph.D.*
*Co-Author(s): Larry F. Abbott, Ph.D.*

**SUMMARY:**

Neural networks can operate in multiple computational states corresponding to different tasks or subtasks. Transitioning between these states may be influenced by a network's own activity. For example, monkeys have reaction time increases if motor cortex is disturbed with microstimulation immediately before the go cue, suggesting that the transition between the delay and movement states has been postponed (Churchland and Shenoy, J Neurophysiol, 2007). This could reflect a self-monitoring system that recognizes the post-microstimulation activity as noisy, and thus delays transitioning until appropriate movement preparatory activity is recovered. To study transitioning, we trained a recurrent neural network to possess multiple non-fixed-point states, each associated with a particular trajectory produced by the network's linear readout unit. Inputs drive the network to transition between these states. We then included additional readout units ("transition opportunity detectors") whose roles are to monitor network activity and act as gates that permit transitioning only when the network activity is within some region of firing-rate space. Depending on the detectors' tuning, a wide range of network behaviors can be produced including no transitioning, deterministic cycles of states, and both Markovian and non-Markovian stochastic transitioning (in the presence of noise). Thus we show that networks can monitor their activity and influence their state transitioning as in the microstimulation experiments. Furthermore, we show that in large networks, with high probability, random projections will provide a library of detectors from which those needed to effect a desired transitioning behavior can be chosen. These units tile firing rate space in a state-dependent manner, and, as state-dependent dynamics evolve, their population response resembles the condition-dependent time cells seen in hippocampus (Eichenbaum, in preparation) and posterior parietal cortex (Harvey et al., Nature, 2012), suggesting that these heretofore unexplained results may be features of random connectivity in the setting of neural dynamics.

**NO. 142**

**IDENTIFYING ALCOHOL USE PROBLEMS IN SUICIDE ATTEMPTERS USING BIOCHEMICAL MARKERS**

*Lead Author: Oh Eugene, M.D.*
*Co-Author(s): Seongho Min, M.D*
*Min-Hyuk Kim, M.D*

**SUMMARY:**

Background: Many patients who commit and attempt suicide have alcohol use disorder and alcohol use problems is a risk factor for suicide reattempt. However, identifying alcohol use problem is difficult because of their tendency to hide or minimize the problem. This study aimed to estimate the effectiveness of alcohol-related biochemical markers for suicide attempters who visited an emergency room.
Methods: A total 224 subjects were selected from the patients who visited the Wonju Severance christian hospital emergency room with suicide attempt between December 2010 and August 2013. Clinical interview by psychiatrist and AUDIT-C were used to evaluate alcohol use problems and psychiatric disorders. Aspartate aminotransferase (AST), g-glutamyltransferase (GGT), carbohydrate-deficient transferrin (CDT) were assayed by standard methods and GGT-CDT was calculated according to the formula reported previously. Receiver operating characteristics (ROC) analysis was performed.
Results: One hundred four patients(63 men, 41 women) met the criteria for frequent heavy alcohol use (AUDIT-C≥4 in men, ≥3 in women) and 75 patients included reference group(AUDIT-C<4 in men, <3 in women). Mean value of GGT(76.36[95% CI 56.36-96.36]), CDT(2.17[95% CI 1.63-2.70]), GGT-CDT(3.38[95% CI 3.13-3.62]) in frequent heavy alcohol use were significantly higher than in the reference individuals. The sensitivity and specificity of AST(cut-off 40U/l) were 27% and 84%, GGT(cut-off 40U/l) 46% and 87%, %CDT(cut-off 2.6%) 19% and 97%, GGT-CDT (cut-off 4.18 in men, 3.85 in women) 34% and 97%. AUC were 0.648 for AST, 0.720 for GGT, 0.797 for CDT and 0.790 for GGT- CDT.

Conclusions: Among suicide attempters, CDT and GGT-CDT testing yielded good specificity, but low sensitivity for detecting problematic alcohol use, having limitations its clinical utility for detecting unhealthy alcohol use in this population.

**NO. 143**

**INCREASED CONNECTIVITY BETWEEN AMYGDALA AND FRONTAL CORTEX IN BORDERLINE PERSONALITY DISORDER USING DIFFUSION TENSOR IMAGING**

*Lead Author: Zachary Feldman, A.B.*
*Co-Author(s): Eric Fertuck, PhD, Barbara Stanley, PhD, John Mann, MD, Joy Hirsch, PhD, Jack Grinband, PhD*

**SUMMARY:**
Borderlines personality disorder (BPD) is characterized by emotional dysregulation, which is associated with functional (Donegan et al., 2003; New et al., 2007) and structural (New et al., 2013) abnormalities in the amygdala and medial prefrontal cortex. Functional studies have demonstrated over-activation of the amygdala during emotional processing and a diminished response in cognitive control regions. Furthermore, studies have shown decreased gray matter volume in the ACC, hippocampus, and amygdala in BPD (Hazlett et al., 2004; Irle et al., 2005; Minzeberg et al., 2008; Tebartz van Elst et al., 2003; Nunes et al., 2009; Zetzsche et al., 2007; Brambilla et al., 2004). We hypothesized that the structural connectivity between the amygdala and prefrontal control regions would also be disrupted in BPD. Using diffusion tensor imaging and tract based spatial statistics, we compared white matter tracts from demographically matched female BPD patients (n=17) and healthy controls (n=15). Group comparison showed increased connectivity ($p \leq 0.05$) between the amygdala and the prefrontal cortex (Brodmann area 9/10) in BPD patients. BA 9/10, an area that develops relatively late in childhood and early adulthood, is believed to be responsible for acquisition of emotional self-regulation via prefronto-limbic connections (Lévesque et al., 1998). Lesions to BA 9/10 compromise awareness of, understanding, and expressing emotions in adults (Hoffman et al., 2012), and developmental studies of healthy children show an association between emotional control and myelination and dendritic development of this area (Bourgeois et al., 1994; Huttenlocher, 1994; Rakic et al., 1994). We speculate that in BPD, the increased projections from the amygdala are associated with emotional hyperactivity, which disrupts control processes of the medial prefrontal cortex.

**NO. 144**

**MODELING RUBINSTEIN-TAYBI SYNDROME IN DROSOPHILA AND IDENTIFYING LITHIUM AND MGLUR ANTAGONISTS AS TREATMENTS THAT RESCUE COGNITIVE IMPAIRMENT**

*Lead Author: Simmie Foster, M.D., Ph.D.*
*Co-Author(s): Brian P. Schoenfeld, Aaron J. Bell, Paul Hinchey, Maria Kollaros, Neal J. Ferrick, David A. Liebelt, David Ferreiro, Joseph Hinchey, Steven J. Siegel, Thomas V. McDonald, Catherine H. Choi, Sean M. J. McBride, Thomas A. Jongens*

**SUMMARY:**
Rubinstein-Taybi syndrome is a monogenetic developmental disorder that often results in intellectual disability and autism. The incidence estimates range from 1 in 10,000 to 1 in 100,000 individuals. Afflicted individuals often have comorbid problems with sleep and attention. Currently no disease modifying treatments for the Rubinstein-Taybi syndrome exist. In about half of cases, the syndrome results from a single gene loss of function mutation in the CREB Binding Protein (CBP) gene. Herein we have developed a model in Drosophila, based on hypomorphic mutations in the Drosophila CBP (dCBP) that result in decreased protein expression and decreased function at the presynapse of the neuromuscular junction and decreased CREB mediated gene transcription (Marek et al., 2000). We characterized social and cognitive impairments in a Drosophila model of Rubinstein-Taybi syndrome. The model has impairments in social interactions (naïve courtship), immediate recall memory, short term memory and long term memory. Additionally we found a genetic interaction where loss of dfmr1 can enhance the phenotype of impaired social interaction in the model. Previously the mouse model of Rubinstein-Taybi syndrome has been demonstrated to have impairments in memory and long term potentiation in the CA1, which can be rescued by treatments with PDE4 inhibitors or HDAC inhibitors. We find that both of these treatments can rescue short term and long term memory in the fly model, further validating the fly model. Furthermore, given the interaction with dfmr1, we were led to attempt to rescue cognitive impairment with drugs that have been shown to be effective in that model. We found that treatment with lithium or mGluR antagonists could rescue cognitive impairment in the Drosophila model of Rubinstein-Taybi. This work develops a novel model of Rubinstein-Taybi syndrome in Drosophila that can be used for genetic dissection and drug screens as well as demonstrating the potential efficacy of two new drugs that should now be tested in the mouse model.

**NO. 145**

**LONG-TERM OUTCOMES OF 173 PATIENTS WITH FUNCTIONAL NEUROLOGICAL DISORDERS**

*Lead Author: David Fudge, B.Sc., M.D.*
*Co-Author(s): Rebecca Anglin, M.D., Ph.D., FRCP(C), Michael Mazurek, MD, FRCP(C) Patricia Rosebush, M.Sc (N), M.D., FRCP(C)*

**SUMMARY:**
Introduction: While Functional Neurological Disorders (FND) have been recognized since the time of Charcot and Freud, there are few long-term studies of outcome from this condition. We have prospectively assessed and treated 173 consecutively referred cases of severe FND with attention to (1) response to treatment; (2) accuracy of diagnosis. Methods: Patients were referred with a diagnosis of severe FND to our Neuropsychiatry Clinic at McMaster University over a 25-year period. All patients had previously been neurologically assessed and extensively investigated. Consent for chart review and data extraction was obtained through the Hamilton Integrated Ethics Board. Results: The sample consisted of 129 females (x age 38.2 years) and 44 males (x age 33.9 years). FND subtypes were as follows: non-epileptic seizures (N= 51, 29.4%), paralysis (N= 45, 26.0%), movement disorder (N= 35, 20.2%), ataxia/gait disturbance (N=16, 9.2%), speech disorder (N= 6, 3.4%), pseudodementia (N= 4, 2.3%) and other (N=16, 9.2%). In 118 patients (68.2%) the FND interfered completely with an ability to work or function in the home or attend school. The median time of follow-up was 3 years (range 0.5-20 years). 115 of the 173 patients engaged in and completed treatment (x duration 7.1 months; SD= 7.63; range 2 weeks-36 months). The remainder failed to engage or dropped out. Of the 115 patients who completed treatment, 83 (72%) recovered fully and 25 (21%) had partial but clinically significant improvement. Treatment included combinations of psychoeducation, psychotherapy, physiotherapy or speech therapy when appropriate, and medications for comorbid psychiatric illness, which was present in 74% of patients treated. Of these patients the most common were mood disorder (26%), personality disorders (17%); other

somatoform disorders (12.8%), anxiety disorders (8.3%) and PTSD (2.2%). Over the follow-up period we diagnosed a previously unrecognized neurological or medical condition that fully explained the clinical picture in 10 cases. Conclusions: A high percentage of patients with severely incapacitating FND can enjoy substantial or full recovery providing they engage with therapy. A minority of patients, thought to have a FND, have unrecognized illnesses that can account for the entire clinical presentation. It is important to recognize and treat comorbid psychiatric and neurological conditions.

**NO. 146**

**INTERIM RESULTS OF A PROSPECTIVE STUDY ASSESSING THE IMPACT OF A BIOLOGIC AGENT ON THE QUALITY OF LIFE IN PATIENTS WITH PSORIASIS**

*Lead Author: Gabrielle Brown, M.S.*
*Co-Author(s): Mona Malakouti M.S., Argentina Leon M.D., Ethan Levin M.D., Eva Wang B.S., John Koo M.D.*

**SUMMARY:**
Introduction
Psoriasis is a chronic immune-mediated inflammatory skin condition that affects 2-3% of the United States population.1 Patients with psoriasis often experience psychosocial and occupational difficulties that diminish their quality of life due to the visible and uncomfortable nature of their disease. However, beyond quality of life, psoriasis is likely to have a tremendous negative impact on psychological well-being. The often inconvenient nature of traditional topical therapies may further diminish a patient's quality of life. The development of biologic agents, such as ustekinumab, has greatly improved therapeutic options for patients with generalized psoriasis. The purpose of this study is to prospectively assess the effect of ustekinumab treatment on generalized psoriasis, with an emphasis on the psychosocial and occupational well being of patients assessed using multiple validated psychometric instruments pre and post treatment. The results will be compared against the intensity of negative psychological impact documented in other serious medical conditions.
Methods
This study plans to include 35 patients, 16 of which have completed the study. Male and female adult subjects with moderate-to-severe (≥10% BSA) plaque-type psoriasis received ustekinumab injections on weeks 0, 4, 16, & 28. Patients were assessed every 4 weeks for psoriasis severity and quality of life. Psoriasis severity was measured using the Psoriasis Area and Severity Index (PASI). Quality of life was assessed using the Dermatology Life Quality Index (DLQI), Psychological General Well Being (PGWB), Work Productivity and Activity Impairment (WPAI), and Psoriasis Quality of Life-12 Items (PQOL-12).
Results
The interim data illustrates that pre-treatment, patients with psoriasis suffer intense negative psychological impact comparable to untreated congestive heart failure, diabetes, breast cancer, and COPD based on PGWB scores. After 36 weeks of treatment with ustekinumab, patients experienced improved psychological status so that their scores were similar to the general public. For those subjects who achieved a ³75% improvement in PASI, overall work impairment and activity impairment due to psoriasis improved 23% and 30% respectively. Marked improvement was also seen in DLQI and PQOL-12 with ustekinumab treatment.
Discussion
Pre-treatment, psoriasis patients suffer as intense negative psychological impact as patients with untreated congestive heart failure, diabetes, breast cancer, and COPD.
Following 36 weeks of effective treatment with ustekinumab, psychological well-being in psoriasis subjects was restored to a level no different than the general population. With effective therapy, the psychological well being of patients with psoriasis can improve greatly demonstrating that appropriately aggressive and effective intervention by dermatologists is critically indicated.

**NO. 147**

**SUBSTANCE ABUSE AND FIRST PSYCHOTIC EPISODE: CLINICAL CHARACTERISTICS AND FUNCTIONALITY IN COLOMBIAN PATIENTS**

*Lead Author: Jairo Gonzalez, M.D.*
*Co-Author(s): Andrés Buitrago, M.D., Juan C. Florián, M.D., Lina M. Gaitán, M.D., Jeffrey González, M.D., Violeta Hoyos, M.D., Ana M. Isaza, M.D., Liliana Méndez, M.D., Luz A. Mera, M.D., Adrián Muñoz, M.D., Pilar Parra, M.D., Álvaro J. Rada, M.D., Paola Rondón, M.D., María Rodríguez, M.D., Juan E. Rosales, M.D., Ángela Soto, M.D., Rodrigo Córdoba, M.D.*

**SUMMARY:**
Substance abuse is more prevalent among patients with psychotic disorders than in general population. Although causal relationship is under study, it is recognized that cannabis use increases the risk of developing the disorder, shortens age of onset and alters the patient outcome. The aim of this study is to describe the socio-demographic characteristics, degree of functionality, family history of mental illness, duration of previous symptoms and characteristics of substances use in a sample of colombian patients with First Psychotic Episode (FPE). DESIGN: A multicentre study conducted between June 2013 and May 2014 in Bogotá, Colombia; data were collected using PANSS, DAST, PSP and an ad hoc survey. The selected patients are those older than 14 years who have a FPE. Patients with a history of psychotic, affective or developmental disorder or psychotic symptoms for 6 or more months duration are excluded. RESULTS: A high prevalence of FPE was found over 40 years. Patients with substance abuse had an earlier debut. Lifetime prevalence of use was 69.2% and 72% of patients had a history of polydrug use. The most used substances were alcohol, cigarette and cannabis. Both prodromal symptoms such as psychotic symptoms in not consumers (NC) have a more insidious and lasting progress. The severity of psychotic symptoms was similar among consumers (C) and NC. The functionality of C was lower than in NC. CONCLUSIONS: Rates of smoking and alcohol consumption did not differ from those of the colombian general population, unlike the other substances consumption rates are notoriously high. Abusers had a less insidious presentation of prodromal symptoms and a greater dysfunction as reported in PSP. No major differences in terms of clinical presentation. LIMITATIONS: These results are preliminary, so the sample is small and the results can not be fully extrapolated. Further studies are needed to deepen this line.

**NO. 148**

**DETAILS OF P450 ENZYMES KEY ROLE IN METABOLISM OF**

**PHARMACEUTICALS**

*Lead Author: James A. Halgrimson, D.O.*

**SUMMARY:**

P450 Enzymes play a quintessential role in the metabolism of hydrocarbons in the human body, most notably, pharmaceuticals. Since their discovery by Poulos et al in the 1960's, P450's have been a focus of study in the fields of biochemistry and biophysics, and are well established as a key player in pharmacodynamics. P450 enzymes are a superfamily of metalloenzymes found in all living organisms, from humans to archae. Since the beginning of P450 enzyme research, 57 well defined isoforms of P450 enzymes have been identified in the human body, and are believed to contribute to processing and excretion of pharmacologic substrates. Given the ubiquitous nature of P450's, easily studied analogues of P450 enzymes have been isolated to greatly contribute the study of P450 enzyme chemistry. This study demonstrates utilization of an archaeic P450 enzyme, CYP119, as a model for human P450 biochemistry. While a great deal is currently understood regarding the chemical reactivity of P450's, uncertainty continues to persist regarding the key oxidants of P450 enzymes and their underlying reaction intermediates. This study presents evidence indicating findings of P450 reaction intermediates using laser flash photolysis and X-ray absorption spectroscopy that have not been previously demonstrated in an innate P450 system. This evidence is believed to further contribute to the understanding of the role of P450 enzymes in human pharmacodynamics.

**NO. 149**

**COGNITIVE IMPAIRMENT IN COMPLICATED GRIEF**

*Lead Author: Charles Hall, B.A.*
*Co-Author(s): Amy Begley, M.A., Meryl Butters, Ph.D., Jody Corey-Bloom M.D., Ph.D., Barry Lebowitz, Ph.D., Charles F. Reynolds III, M.D., M. Katherine Shear, M.D., Naomi Simon, M.D., Sidney Zisook, M.D.*

**SUMMARY:**

Introduction: Psychiatric disorders such as depression are often associated with mild cognitive impairment (MCI) and may be a risk factor for dementia. This raises the possibility that, like depression, complicated grief (CG), which often coexists with major depression and post traumatic stress disorder, may induce chronic stress on the brain leading to neurotoxicity and cognitive decline. Early studies have suggested that complicated grievers have greater neurocognitive deficits compared to non-bereaved and normally bereaved controls.

Objective: To explore and describe the relationship between cognitive impairments and CG. We will identify if, and to what extent cognitive functioning differs in complicated grievers compared to normal controls after adjusting for age, sex and education.

Methods: The Montreal Cognitive Assessment (MoCA) test was administered to our sample of 313 CG participants as a part of an ongoing NIMH-sponsored multicenter trial investigating CG treatment. CG was defined as a score of 30 or greater on the Inventory of Complicated Grief (ICG). Data from 250 control participants have been previously published by Corey-Bloom and colleagues at UCSD. We measured cognitive impairment using the MoCA. Total MoCA scores were calculated using the sum of the items. No point was added if education was fewer than 12 years. Analysis of covariance was used to determine if global MoCA scores differed between persons with CG participants and normal controls.

Results: Increased age was associated with decreased MoCA scores ($F(1,556)53.53$, $p<0.001$). Women and those with more education had higher MoCA scores ($F(1,556)=5.28$, $p=0.02$ and $F(3,556)=8.85$, $p<0.001$), respectively. After controlling for age, sex, and education complicated grievers displayed lower global MoCA scores relative to normal controls ($F(1,556)=8.46$, $p=0.004$). The mean (SD) MoCA score in CG was 26.8 (2.2) compared with 27.1 (2.2) in controls. The median MoCA score was 27 in CG and 28 in controls. Age, sex, education and sample group explained 15% of the variance in MoCA scores while sample group alone explained approximately 1.3% of the variance.

Conclusion: Complicated grievers displayed greater levels of cognitive impairment as compared to controls even after controlling for age, sex, and education. This study adds to the growing literature detailing the conceptual framework of CG. Future studies exploring cognitive dysfunction in the context of CG may further aid the description of CG's clinical phenotype and may have implications for enhancing diagnostic accuracy, treatment and screening.

**NO. 150**

**EVIDENCE FOR ASSOCIATION BETWEEN BRAIN-DERIVED NEUROTROPHIC FACTOR(BDNF) GENE AND PANIC DISORDER: NOVEL HAPLOTYPE ANALYSIS STUDY**

*Lead Author: Eun-jin Han, M.D.*
*Co-Author(s): Seung-Hyun Kim, M.D., Ph.D., Yong-Ku Kim, M.D., Ph.D., Jung-A Hwang, M.S., Heon-Jeong Lee, M.D., Ph.D., Kyeong-Sae Na, M.D., Ph.D., Ho-Kyoung Yoon, M.D., Ph.D.*

**SUMMARY:**

Objectives: Panic disorder(PD) is a common psychiatric disorders with a complex etiology and several studies have suggested a genetic component to PD. Brain-derived neurotrophic factor (BDNF) is the most abundant of the neurotrophins in the brain, and is recognized as playing an important role in the survival, differentiation and growth of neurons. Several lines of research have suggested possible associations between the BDNF gene and PD. In this study, we investigated the BDNF 196G/A (rs6265), 11757G/C (rs16917204), and 270C/T (rs56164415) SNPs for association with PD. We also identified the genetic sequence associations with PD via haplotype analysis.

Method: The participants in this study were 136 PD patients and 263 healthy controls. Male and female subjects were analyzed separately. The genotype and allele frequencies of the PD patients and controls were analyzed using $\chi 2$ statistics. Frequencies and haplotype reconstructions were calculated using the SNP analyzer 2.0.

Results: We found no significant statistical differences in the genotype distributions or allele frequencies of the three tested polymorphisms between the PD and control groups. In addition, no differences were found between PD patients and controls in either the male or female subgroups. Furthermore, no significant association was demonstrated between the genotype distributions and PD with or without agoraphobia. However, we found that, the frequency of the GC haplotype was significantly higher in PD patients than in the controls.

Conclusion: Our result is meaningful in that this is the first

study to identify associations between two BDNF SNPs and PD in the Korean population by investigating the related haplotypes. Further studies are needed to replicate the associations that we observed.

Key words : Panic disorder, Brain-derived neurotrophic factor, Polymorphism

Abbreviations:
BDNF, Brain-derived neurotrophic factor; PD, panic disorder; SNP, single nucleotide polymorphism

**NO. 151**

**ANTIPSYCHOTICS FOR THE TREATMENT OF DELIRIUM IN NON-ICU SETTINGS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS**

*Lead Author: Tomoya Hirota, M.D.*
*Co-Author(s): Taro Kishi, M.D., Ph.D., Sheryl Fleisch, M.D., Wesley Ely, M.D,, M.P.H.*

**SUMMARY:**

[Objective] Although antipsychotics (APs) have been used empirically to alleviate symptoms of delirium in acute hospital settings, there has been no confirming evidence to support their use. A recent clinical practice guideline by American College of Critical Care Medicine shows lack of evidence of APs for the treatment of delirium in ICU patients but no clinical practice guideline in non-ICU settings has been reported as of November 2013. Moreover, several randomized controlled trials investigating efficacy and safety of APs in non-ICU setting have been published since a previous systematic review by Cochrane group was published in 2007, which included only 3 studies and concluded no significant difference in the efficacy between haloperidol (HAL) and two second generation antipsychotics (SGAs), olanzapine (OLA) and risperidone (RIS). Thus, we conducted a systematic review and a meta-analysis to elucidate the efficacy and tolerability of APs in the treatment of delirium in non-ICU setting. [Methods] We searched MEDLINE, EMBASE, the Cochrane Library databases, CINAHL, and PsycINFO from inception to November 2013, using the following keywords: “antipsychotics” or each generic name of APs and “random” and “delirium.” The references of included articles and review articles in this area were also searched for citations of further relevant published and unpublished research. The primary outcome measure was severity of delirium, as measured using the highest scores of Delirium Rating Scale (DRS), DRS-Revised-98, and Memorial Delirium Assessment Scale. A 95% confidence interval (CI) and standardized mean differences (SMD) were used. [Results] Eleven studies (8 published and 3 conference abstracts) including 609 patients were identified. Among them, data from 9 studies were available for meta-analyses. Only one article was placebo-controlled study, comparing quetiapine (QUE) with placebo, which did not show significant difference between two groups in the reduction of severity of delirium. The rest of studies were head to head studies comparing different APs. There were no statistically significant differences between three SGAs, OLA, QUE, or RIS and HAL in the reduction in severity of delirium (SMD=-0.02, CI: -0.27 to 0.24, p=0.89), and discontinuation due to any cause. Among SGAs, RIS showed comparable efficacy in decrease in severity of delirium with aripiprazole (ARI) and OLA (SMD=-0.18, CI: -0.68 to 0.32, p=0.49) and discontinuation due to any cause. [Conclusion] Our results showed no significant differences in both efficacy and tolerability between haloperidol and three SGAs (OLA, QUE, and RIS) as well as within three SGAs (RIS vs. ARI or OLA). Due to heterogeneity in patient populations and study design and quality, however, caution should be required when interpreting our results. Larger trials will need to occur to assist in establishing guidelines on true efficacy of APs in the treament of delirium in non-ICU setting.

**NO. 152**

**FACTOR ANALYTIC STRUCTURE AND HERITABILITY OF TOURETTE SYNDROME SYMPTOMS**

*Lead Author: Matthew E. Hirschtritt, M.P.H.*
*Co-Author(s): Matthew E. Hirschtritt, M.P.H., Sabrina M. Darrow, Ph.D., Kevin L. Delucchi, Ph.D., and Carol A. Mathews, M.D.*

**SUMMARY:**

BACKGROUND: Tourette Syndrome (TS) is a phenotypically and genetically heterogeneous condition. Previous attempts to create homogenous subgroups of individuals with TS have been limited by relatively small sample sizes, brief symptom inventories, and methodological issues. In addition, few studies have analyzed the heritability of the symptom factors. OBJECTIVES: Using the single largest known set of TS-affected probands and their families, we sought to (1) define factors of tic symptoms, and tics combined with obsessive-compulsive (OC) and ADHD symptoms, (2) correlate these factors with clinical and demographic characteristics, and (3) estimate the heritability of the resulting factors. METHOD: We used symptom-level data and clinical characteristics from probands (n = 1,256) and family members (n = 2,385) participating in the Tourette Syndrome Association International Consortium for Genetics (TSAICG). Tic symptom items were subjected separately and then together with OC and ADHD symptoms to a series of factor analyses. We then used the resultant factor sum scores to predict clinical and demographic characteristics. Finally, we estimated the heritabilities of the factors and compared those to the heritability estimates of TS, OCD, and ADHD diagnoses. RESULTS: Factor analysis yielded a 6-factor best-fit solution for tics: eye tics, facial tics, upper-extremity and trunk tics, tic-related compulsive behaviors, socially inappropriate tics, and simple phonic tics. The factor analysis of all symptoms (tics, OCD, and ADHD symptoms) resulted in a 4-factor solution (tics, obsessive-compulsive symptoms, aggressive and taboo behaviors, and ADHD symptoms). The tic factor consisting of tic-related compulsive behaviors was associated with the greatest number of clinical characteristics, including history of psychotropic medication use, OCD and ADHD diagnoses, OCD and TS severity, and TS-associated impairment. Heritability estimates for the individual tic factors ranged from 0.20 to 0.29; the estimate for all tic items combined was 0.40 (SE = 0.039, p = 1.3e-25). Heritability estimates of the combined tic, OC, and ADHD 4 factors ranged from 0.30 to 0.47; the estimate for all symptom items combined was 0.57 (SE = 0.037, p = 4.8e-48). Heritability estimates for categorical diagnoses were higher than for quantitative traits (0.77, 0.51, and 0.68 for TS, OCD, and ADHD, respectively). CONCLUSION: TS-related symptoms segregate into factors composed of simple and complex tics; these individual factors are associated with comorbid diagnoses, symptom severity, and treatment history; and are moderately heritable. Diagnostic categories are more heritable than the quantitative traits examined here; the sources of this “missing heritability” have yet to be identified.

**NO. 153**

**PERINATAL OBSESSIVE-COMPULSIVE DISORDER: A PROSPECTIVE STUDY OF COURSE OF ILLNESS AND IMPACT ON NEONATAL OUTCOMES**

*Lead Author: Samuel J. House, M.D.*
*Co-Author(s): Shanti P. Tripathi[1], M.S., Bettina T. Knight[1], R.N., Natalie Morris[1], B.S., D. Jeffrey Newport[2], M.D., Zachary N. Stowe[1], M.D.*

**SUMMARY:**
Objective: To investigate the course of illness of perinatal obsessive-compulsive disorder (OCD) and its impact on neonatal outcomes.
Method: A cohort of women was enrolled before conception or during pregnancy prior to 20 weeks gestation in this prospective, observational study. Patients underwent the Structured Clinical Interview for the DSM-IV diagnosis. A total of 56 women with OCD were followed at 1 to 3 month intervals through 52 weeks postpartum. At each visit, the Yale-Brown Obsessive Compulsive Scale (YBOCS), clinical interview, and exposure (medications, environmental toxins, etc) tracking was performed. Obstetrical and neonatal data was abstracted from the medical record. Potential associations between OCD severity and course of OCD during pregnancy and the postpartum postpartum with obstetrical and neonatal outcomes were examined.
Results: Advanced maternal age inversely correlated with the severity of OCD symptoms (β = -0.5161, p = .0378). Mothers who delivered via Caesarian section (C-section) had greater OCD symptoms in the postpartum period compared to vaginal delivery (β = 5.3632, p = .0430). No significant associations were found between the severity of obsessions or compulsions in the perinatal period with obstetrical and neonatal complications.
Conclusion: These novel data from women treated for OCD and followed throughout the perinatal period suggest that OCD symptoms do not significantly alter obstetrical and neonatal outcomes. In contrast, preliminary data indicates that obstetrical outcomes may influence the course of OCD. Maternal age at delivery and the method of delivery may serve as predictors for worsening of OCD symptoms in the postpartum period.

**NO. 154**

**RELATIONSHIP OF SUICIDE RISK WITH EARLY LIFE STRESS AND RESILIENCE IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER**

*Lead Author: Kyu-Hyeong Huh, M.D.*
*Co-Author(s): Won-Jung Choi. M.D., Jeong-Ho Seok. M.D., Ph.D.*

**SUMMARY:**
Introduction:
Early-life stress (ELS) including child abuse and exposure to inter-parental violence can lead to psychiatric morbidities. The childhood period is especially sensitive to environmental disturbances and 4-fold increases in the risk of depression with multiple childhood adverse experiences. The experience of significant ELS may increase the risk of suicide attempt. Resilience is the capacity for adaptation in the face of life adversities such as ELS to bounce back from these traumatic life events.
Purpose:
The aim of this study is to investigate the relationship of suicide risk with ELS and resilience in patients with major depressive disorder.
Materials and Methods:
The participants were 60 patients with major depressive disorder (72.1% female, mean [SD] age, 31.44 [9.698] years) and 29 healthy volunteers. (72.4% female, mean [SD] age 31.62 [7.917] years). Each subject was assessed concerning ELS including child abuse (emotional abuse, physical abuse, sexual abuse, and neglect) and exposure to inter-parental violence, resilience factors (self-regulation, interpersonal relationship capacity, psychological positivity), suicide ideation and depressive symptom severity with self-re¬port questionnaires. Chi-square test, two-way ANOVA and multiple linear regression analyses were conducted to find significant relationship among these variables.
Results:
Age and gender distribution were not significant between patient and control groups. Education level was higher in the control group than in the patient group. In two-way ANOVA analysis, there were significant main effects of depression diagnosis in emotional abuse and exposure to inter-parental violence. Significant interaction effect between depression diagnosis and child abuse experience were observed in emotional abuse and physical abuse. Resilience factors including self-regulation, interpersonal relationship capacities, and psychological positivity were significantly lower in the patient group than in the control group. Main effect of child abuse experience and interaction effect of depression and child abuse were not significant in resilience factor scores. In multiple regression analyses, final regression model including physical abuse, neglect, and self-regulation factor was significant explaining 45.6% variance of suicide ideation score ($F=15.093$, $p < 0.001$).
Conclusion:
We also can find that ELS experiences, especially emotional abuse and exposure to inter-parental violence, might be a significant risk factor for developing depression. In particular, experiences of physical abuse and neglect might increase the risk of suicide in depression but resilience may play a protective role for developing depression and preventing suicide in depressive patients. Holistic intervention programs for increasing resilience capacity would be helpful for preventing suicide in patients with major depressive disorder.
Key words:
early-life stress, resilience, depression

**NO. 155**

**ASSOCIATION OF PARENTAL STATUS AND DIAGNOSIS OF POSTTRAUMATIC STRESS DISORDER AMONG VETERANS OF OPERATIONS IRAQI AND ENDURING FREEDOM**

*Lead Author: Shonda Janke-Stedronsky, M.D.*
*Co-Author(s): Laurel A. Copeland, Ph.D., David S. Greenawalt, Ph.D., Daniel J. MacCarthy, Ph.D., Eileen M. Stock, Ph.D., Jack Y. Tsan, Ph.D.*

**SUMMARY:**
INTRODUCTION: Extensive research over the past two decades has focused on elucidating the risk factors for posttraumatic stress disorder (PTSD). Numerous studies have investigated the interplay between stressors, social factors, and trauma exposure in the development and treatment of PTSD. Whereas prior

research has documented that social support may decrease risk of and facilitate recovery from PTSD, the effect of parental responsibility on the development of PTSD is largely unexplored. The aim of this study was to examine rates of newly diagnosed PTSD among Operations Enduring and Iraqi Freedom (OEF/OIF) Veterans with dependent children at separation from the military versus Veterans without children.
METHODS: The Veterans Services Network (VETSNET) and other administrative databases were queried to identify and characterize 78,762 OEF/OIF Veterans seeking care in the Veterans Health Administration (VA) during fiscal year 2009. This included 39,381 Veterans identified as parents of minor children who were matched 1:1 on age, gender, and demobilization date to Veterans without dependent children. A logistic regression model assessed the relative odds of newly diagnosed (in the VA healthcare system) PTSD as a function of parent status controlling for clinical and demographic covariates.
RESULTS: Veterans from OEF/OIF were approximately 32 years old (SD 8). Those with children were more likely to be diagnosed with PTSD than those without (41% vs 32%). Analysis revealed that Veterans with dependent children were 1.6 times more likely to be diagnosed with PTSD.
CONCLUSION: Results of this observational study suggest that having dependent children may be an additional factor to consider when assessing risk of developing PTSD or likelihood of seeking treatment for PTSD.

**NO. 156**
**SORTING NEXIN 27: A FUNDAMENTAL MEDIATOR OF AMPA RECEPTOR TRAFFICKING AND SYNAPTIC PLASTICITY**
*Lead Author: Nicole T. Jiam, B.A.*
*Co-Author(s): Kirsten Bohmbach B.A., Richard L. Huganir Ph.D., Natasha Hussain Ph.D., Nicole T. Jiam B.A., Jonathon Sole B.S., M.S.*

**SUMMARY:**
Ionotropic glutamate receptors are tetrameric channels located in neuronal post-synaptic terminals. Of the ionotropic glutamate receptors, AMPA-type glutamate receptors (AMPARs) are the major excitatory receptors for the brain and important for synaptic transmission. As with most receptors, AMPAR synaptic levels are dynamic and regulated by endosomal trafficking. These fluctuations in AMPAR expression are crucial for human capacity for learning and memory; diseases such as Alzheimer's are associated with synaptic AMPAR dysfunction. However, the mechanism underlying AMPAR receptor trafficking remains unclear. Recent evidence suggests sorting nexin 27 (Snx27) may be a key molecular agent in Down syndrome pathogenesis and AMPAR trafficking. Within the sorting nexin family (defined by a characteristic PX domain), Snx27 is the only member to carry a PDZ domain protein. We speculate a role for PDZ in receptor trafficking. However, the molecular interactions between AMPAR subunits and Snx27 have not been elucidated. In this study, we hypothesize that Snx27 interacts directly with AMPAR through its PDZ domain. Using co-immunoprecipitation, knockins, and imaging techniques, we identify the domains involved in the direct interaction between Snx27 and AMPAR. We demonstrate an increase in AMPAR surface expression with Snx27 overexpression. Moreover, modifications to the PDZ (H112A) and the PX (delta PX) domains negatively alter AMPA receptor binding and reduce AMAPR surface expression. Mutations in the AMPAR subunits also disrupt Snx27 binding. Our novel study establishes the PDZ and PX domains as necessary and sufficient constructs in AMPAR endocytic sorting and trafficking. These molecular findings will champion targeted therapies for receptor trafficking-related disease such as Down syndrome.

**NO. 157**
**PREDICTORS OF DEPRESSION AND ALCOHOL USE IN MEDICAL STUDENTS**
*Lead Author: Pallavi Joshi, B.A., M.A.*

**SUMMARY:**
High prevalence of depression and alcohol use have been observed in physicians and medical students. It is important to identify predictors of depressive symptoms and alcohol use during their first two years of medical education, a period during which behaviors and attitudes of physicians develop.
A survey using an anonymous self-administered questionnaire, was performed with 61 first and second year medical student (36 male, 59 %) aged 21-30 years. The Beck Depression Inventory-II (BDI-II) and Alcohol Use Disorders Identification Test (AUDIT) were used to determine depressive symptoms and alcohol use. BDI scores of 14 or higher were categorized as depressive and AUDIT scores 8 or higher were considered harmful or hazardous drinking.
Of those surveyed, 8 males (22%) and 8 females (32%) had BDI score of 14 or greater. 21 males (58.3%) and 15 females (60%) drank alcohol at least 2-4 times a month. The individual subsets of the BDI and self-reported alcohol consumption variables were analyzed to understand their interrelationship and their dependence on gender and marital status.

**NO. 158**
**THE EFFECTIVENESS OF CROSS-TAPERING SWITCHING TO ZIPRASIDONE IN PATIENTS WITH SCHIZOPHRENIA OR SCHIZOAFFECTIVE DISORDER**
Lead Author: Hanna Kang
Co-Author(s): Han-Yong Jung, M.D., Ph.D.,
Young-Hoon Ko, M.D., Ph.D.,

**SUMMARY:**
Background: Switching antipsychotics is one useful therapeutic option when the treatment of schizophrenia encounters suboptimal efficacy and intolerability issues. This study aimed to investigate the efficacy and tolerability of cross-tapering switching to ziprasidone from other antipsychotics.
Methods: A total of 67 patients with schizophrenia or schizoaffective disorder were recruited in this 12-week, multicenter, non-comparative, open-label trial. Prior antipsychotics were allowed to be maintained for up to 4 weeks during the titration of ziprasidone. Efficacy was primarily measured using the 18-item Brief Psychotic Rating Scale (BPRS) at baseline, 4 weeks, 8 weeks, and 12 weeks. Efficacy was secondarily measured by the Clinical Global Impression - Severity (CGI-S) scale and the Global Assessment of Functioning (GAF) scale at each visit. Regarding the metabolic effects of switching to ziprasidone, weight, body mass index (BMI), waist-to-hip ratio (WHR), and lipid profile-including triglyceride (TG), high-density lipoprotein (HDL), low-density lipoprotein (LDL), and total cholesterol levels-were measured at each follow-up visit.
Results: The BPRS scores were significantly improved at 12

weeks after switching to ziprasidone (F = 5.96, df = 2.11, P = 0.003), whereas the CGI-S and GAF scores were not significantly changed. BMIs, WHRs, and TG levels were significantly decreased, with no significant changes in other lipid profiles.
Conclusion: Cross-tapering switching to ziprasidone is effective for patients with schizophrenia spectrum disorders. Beyond the efficacy of the procedure, favorable metabolic profiles show that switching to ziprasidone may be helpful for maintenance therapy over an extended period.
Keywords: ziprasidone, schizophrenia, switching, pharmacotherapy, triglyceride

Abbreviations
DSM-IV, Diagnostic and Statistical Manual for Mental Disorders, Fourth edition; EPS, extrapyramidal symptoms; BPRS, Brief Psychotic Rating Scale; CGI-S, Clinical Global Impression - Severity; GAF, Global Assessment of Functioning; TG, triglyceride, HDL, high-density lipoprotein; LDL, low-density lipoprotein; BMI, body-mass index; WHR, waist-to-hip ratio.; UKU-SER-Pat, Udvalg for Kliniske Undersogelser Side Effect Rating Scale – Patient; ITT, intention-to-treat

**NO. 159**
**EFFECTS OF OXYTOCIN ON EMOTION RECOGNITION IN CHRONICALLY DEPRESSED PATIENTS**
*Lead Author: Antoia N. Kellner*
*Co-Author(s): Roman Allert, M.D., Gregor Domes, Ph.D. , Markus Heinrichs, Claus Normann*

**SUMMARY:**
Chronically depressed patients show severe difficulties with social interaction, associated with empathic deficits as well as a negative and self-centered view of oneself and their environment. These deficits result in the social isolation of the patient, and may prolong their chronic depression.
Because it raises the social salience, the importance of oxytocin as a prosocial neuropeptide is increasing. Even more, it seems to play a key role in trust, pair bonding, stress regulation, social support and empathic concern. Considering its variety of social regulations, the possible pathophysiological and therapeutical role of oxytocin in psychiatric disorders is vast. Particularly for disorders with a large social impairment, such as chronic depression, the beneficial effects could be tremendous.
An emotion recognition paradigm was used in a doubleblind, placebo-controlled study design. We examined the speed and number of correctly recognised emotional facial expressions and used eye tracking to evaluate which part of the face was most focused upon by our groups. The groups consisted of: 1) 25 chronically depressed patients treated with a single intranasally administered dose of 24 U oxytocin 45 minutes prior to testing; 2) 25 chronically depressed patients receiving placebo; 3) 20 healthy matched control subjects. In addition to the experimental condition, a extensive psychological testing was performed by each participant.

Results showed that the chronically depressed patients recognised emotions more slowly and had fewer fixations on the eye region than the healthy control group. Chronically depressed patients who received oxytocin maintained eye contact longer than patients receiving placebo. Patients who scored high in the AQ (autism questionnaire) responded specifically well to oxytocin application. Both emotion recognition and eye contact were improved, therefore suggesting that chronically depressed patients with higher levels of autistic traits might feel greater effects from the oxytocin treatment. Also chronically depressed patients showed significantly higher autistic scores in the psychological evaluation when compared to the healthy control subjects.
It can therefore be suggested that chronically depressed patients do show autistic traits and that oxytocin might influence the patients to interact better in social contexts, as emphasized by the increased level of eye contact. These results underline our hypothesis that oxytocin increases the patients accessibility to psychotherapy and enhances the effects of psychotherapy on treatment-resistant depressed patients.

**NO. 160**
**ASSOCIATION OF CLOCK, ARNTL, NPAS2 GENE POLYMORPHISM AND SEASONAL VARIATIONS IN MOOD AND BEHAVIOR**
*Lead Author: Haein Kim, M.D.*
*Co-Author(s): Seung-Gul Kang, M.D., Ph.D., Leen Kim, M.D., Ph.D., Heon-Jeong Lee, M.D., Ph.D., Seung-Hwan Lee, Joung Ho Moon, Young-Min Park, M.D., Ph.D., Soo-Jung So, M.D.,Hyun Mi Song, Hee Jung Yang, Ho-Kyoung Yoon, M.D., Ph.D.*

**SUMMARY:**
Objectives: Seasonal affective disorder (SAD) is seasonal mood changes characterized by recurrent depressions in autumn or winter and spontaneous remission in spring or summer. Several evidences have been suggested that the circadian gene variants contribute to the pathogenesis of seasonal affective disorder. In this study, we aimed to investigate polymorphism in CLOCK, ARNTL, NPAS2 gene in relation to seasonal variations among healthy young adults in Seoul, Korea.
Methods: Total 507 young healthy adult subjects were recruited by advertisement. Seasonal variations were assessed by the Seasonality Pattern Assessment Questionnaire (SPAQ). Single-nucleotide polymorphisms in the CLOCK, ARNTL, NPAS2 gene were genotyped by PCR in 507 individuals. Considering summer type as confounding factor, we conducted analysis 478 subjects except 29 subjects of summer type. The $\chi 2$-test was conducted to compare differences between groups of seasonals and non-seasonals. Association between genotypes and Global Seasonality Score (GSS) were tested using analysis of covariance (ANCOVA). We analyzed the presence of interactions associated with seasonality among the SNPs by multifactor dimensionality reduction method (MDR).
Results: In this sample, the prevalence of SAD was 12.0% (winter type 9.3%, summer type 2.8%). There is no significant difference in genotyping distribution of ARNTL rs2278749 and NPAS2 rs2305160 between groups of seasonals and non-seasonals. T allele of CLOCK rs1801260 is significantly more frequent in seasonals than non-seasonals (p=0.020, OR=1.89, 95% CI=1.09-3.27). GSS was significantly different among genotypes of CLOCK rs1801260, whereas it was not significantly different among genotypes of ARNTL rs2278749 and NPAS2 rs2305160. However, statistical difference was observed in body weight and appetite subscale among genotypes of ARNTL rs2278749 and body weight among genotypes of NPAS2 rs2305160. The overall best MDR model included CLOCK rs1801260 and ARNTL rs2278749 (testing accuracy=0.5643, CVC=10/10, p=0.0107). In MDR analysis, CLOCK rs1801260 and ARNTL rs2278749 have

the strongest synergistic interaction.
Conclusion: This study is the first study revealed the association between CLOCK gene and seasonal variations in mood and behavior. Although we cannot confirm the previous findings of association of SAD and ARNTL, NPAS2 gene, it is conceivable that ARNTL and NPAS2 gene have some degree of influence on seasonal variations in metabolic factor composed of body weight and appetite. Interaction of CLOCK and ARNTL gene contributes to the susceptibility of SAD.

**NO. 161**

**DOWN-REGULATION OF TRKB AND GAD1, NOT BDNF MRNA, IN THE ORBITOFRONTAL CORTEX OF INDIVIDUALS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER**

*Lead Author: Ilbin Kim*
*Co-Author(s): Donghoon Oh, M.D., Ph.D.Ahyoung Paik, M.D. Gangrok Choi, M.D.*

**SUMMARY:**

Background :
Glutamic acid decarboxylase (GAD1) mRNA levels have been found to be reduced in the prefrontal cortex of patients with schizophrenia and mood disorders. Also, growing evidences have suggested defects in neurotrophin signaling mechanism involving brain-derived neurotrophic factor(BDNF) and tyrosine kinase B(trkB) in prefrontal cortex of major psychiatric disorders. To determine whether these abnormalities also apply to orbitofrontal cortex(OFC), implicated in social-emotional functions. we measured the expression levels of BDNF, trkB as well as GAD1 mRNA in regions of the OFC of individuals with schizophrenia, bipolar disorder, major depression and unaffected controls.
Methods :
To investigate the defect of neurotrophin signaling pathway in the OFC of patients with schizophrenia and mood disorders, we examined expression of BDNF, trkB and GAD1 mRNA in each OFC layer I through VI. We analyzed data derived from postmortem brain tissue of the Stanley Neuropathology Consortium Integrative Database(SNCID). SNCID consists of 15 subjects in each of four groups(schizophrenia, bipolar disorder, major depression without psychotic features, and unaffected controls). All groups were matched for age, sex, race, brain pH and post-mortem interval.
Results :
Analyses of variance comparing the expression of mRNA among 4 groups revealed no significant decrease in BDNF mRNA in all layers of OFC of patients with schizophrenia and mood disorders. TrkB mRNA levels were reduced significantly in layer VI of both patients with schizophrenia and bipolar disorder. Both groups with schizophrenia and bipolar disorder also showed significantly less GAD1 mRNA levels in layer III of OFC compared with those with major depression or controls. And in this matched cohort the correlation between TrkB and GAD1 mRNA levels was significantly stronger than the correlation between the BDNF and GAD1 mRNA levels.
Limitation:
It is required to consider factors that may affects the state of molecular preservation in postmortem brain tissue, including brain pH, tissue storage time, and postmortem interval.
Conclusions:
Our findings show abnormal trkB and GAD1 but not BDNF mRNA expression in the orbitofrontal cortex of individuals with schizophrenia and bipolar disorder. indicating that fundamental neurotrophin signaling transmission, circuit and plasticity in OFC may be affected in individuals with these major psychiatric disorders through another bridging mechanisms.

**NO. 162**

**NO ASSOCIATION BETWEEN SEROTONIN-RELATED POLYMORPHISMS IN TPH1, HTR5A GENES, AND ESCITALOPRAM TREATMENT RESPONSE IN MAJOR DEPRESSIVE DISORDER**

*Lead Author: Yong Gu Kim, M.Med.*
*Co-Author(s): Hun-Soo Chang, Ph.D., Byung-Joo Ham, M.D., Ph.D., Min-Soo Lee, M.D., Ph.D. , Eun-Soo Won, M.D., M.Med.*

**SUMMARY:**

Objectives: The genetic variations in serotonin-related genes have been suggested to be associated with antidepressant treatment response in major depressive disorder (MDD). The tryptophan hydroxylase-1 (TPH1) gene and serotonin 5A receptor gene (HTR5A) are known to be involved in serotonin (5-HT) biosynthesis and signal transduction, respectively. The purpose of this study was to investigate a possible interaction between the TPH1 gene and the HTR5A gene in treatment outcome of escitalopram in major depressive disorder (MDD).
Methods: Total of 245 patients diagnosed with MDD were recruited and their symptoms were evaluated using the 17-item Hamilton Depression Rating scale (HAMD-17). The association between the TPH1 218A/C, HTR5A 12A/T polymorphisms and the clinical outcomes (remission, response, changes in HAMD-17 score) was investigated after 2, 4, and 8 weeks of escitalopram treatment using multiple logistic regression or multiple linear regression analysis.
Results: No significant association of TPH1 and HTR5A gene polymorphisms was observed with both response and remission rate at 2, 4, and 8 weeks after treatment. Gene-gene interaction between TPH1 and HTR5A genes were not associated with the treatment outcome.

Conclusions: Our results suggest that TPH1 218A/C and HTR5A 12A/T polymorphisms cannot play a major role as predictor of treatment response with major depression.

**NO. 163**

**NEURAL CORRELATES OF IMPULSIVE AGGRESSIVE BEHAVIOR IN ALCOHOL DEPENDENT SUBJECTS**

*Lead Author: Samet Kose, M.D., Ph.D.*
*Co-Author(s): Samet Kose, MD, PhD, Joel L. Steinberg, MD, F. Gerard Moeller, MD, Joshua L. Gowin, PhD, Edward Zuniga, Zahra N. Kamdar, Joy M. Schmitz, PhD, Scott Lane, PhD*

**SUMMARY:**

Objective: Alcohol-related aggression is a well-documented, complex and problematic phenomenon with profound public health consequences. Studying this relationship by merging methodologies in brain imaging and laboratory behavioral science will further scientific understanding of this complex phenomenon. Here we apply functional magnetic resonance imaging (fMRI) to examine neural correlates that mediate the relationship between human aggressive behavior and chronic alcohol use.
Methods: Thirteen past alcohol-dependent subjects in sus-

tained remission and thirteen matched healthy controls participated in an fMRI study adapted from a laboratory model of human aggressive behavior (the Point Subtraction Aggression Paradigm, or PSAP) to study differences in brain regions underlying aggressive behavior. All subjects were drug and alcohol free on testing days. BOLD activation was measured during bouts of operationally-defined aggressive behavior (subtracting points from a fictitious opponent) relative to a reward-reinforced behavior (earning money based on accumulation of points). Using SPM8, whole brain random-effects analyses examined group differences in brain regions relevant to both chronic alcohol use and human aggressive behavior, including regions related to emotional and behavioral control. A planned ROI analysis focused on activation in the amygdala.
Results: Behaviorally, alcohol-dependent subjects responded on both the monetary and the aggressive response options significantly more than controls. Whole brain random-effects analyses revealed significant group differences, highlighted by control subjects showing greater activation in insula, thalamus, caudate nucleus, inferior and medial frontal gyrus. Within alcohol-dependent subjects only, aggressive responding was positively correlated to activation in the amygdala and negatively correlated to activation in prefrontal cortex and a trend toward positive activation was observed in the amygdala bilaterally. We observed no regions in which activation patterns were greater in alcohol dependent subjects. Planned ROI comparisons in the amygdala showed a trend toward greater activation in the alcohol group.
Conclusion: Our findings revealed that under controlled laboratory and imaging conditions, individuals with past alcohol dependence showed consistently less BOLD activation in brain regions known to correspond to emotion, behavioral control, and human aggressive behavior when provoked by monetary subtractions and when engaging in bouts of aggressive responding

**NO. 164**
**TREATMENT COMPLEXITIES OF A WOMAN SUFFERING FROM PSYCHOTIC DISORDER AND PITUITARY ADENOMA**
*Lead Author: Samet Kose, M.D., Ph.D.*
*Co-Author(s): Samet Kose, MD, PhD, Jon Corey Jackson, MD, Vineeth John, MD*

**SUMMARY:**
Objective: Pituitary adenomas (specifically prolactinomas) are the most common pituitary tumors and are most often treated with dopamine agonists, which may cause psychotic symptoms as a side effect. Psychosis is treated with dopamine receptor blockers that may result in elevated serum prolactin and symptomatic hyperprolactinemia. Treating a patient comorbid for both of these illnesses can pose challenges because the standard treatment for one of the conditions may worsen the other.
Methods: The authors will review a case of a patient with a prolactinoma as well as a psychotic disorder
and illustrate the management of psychosis in this case. The review describes the management
of prolactinoma, symptoms of hyperprolactinemia, and long-term effects of hyperprolactinemia.
Results: In the case presentation reviewed, the patient was finally responded well to Aripiprazole (which can lower prolactin levels), with no significant growth of the adenoma after 1.5 years. Aripiprazole, because of its unique partial agonistic action at D2-receptor, is an ideal agent for the treatment of psychosis in a patient with coexisting pituitary adenoma, it has been recommended as the first line agent when these conditions co-occur.
Discussion: This review provides recommendations and treatment strategy for management of pituitary adenoma in a patient with psychotic disorder. We would recommend against the use of dopamine agonists in a patient with a history of psychosis, except in rare cases and with close psychiatric monitoring. A prolactin-sparing antipsychotic would be the treatment of choice in such patients.

**NO. 165**
**ARE WE MAXIMIZING OR MINIMIZING THE TREATMENT OF ALCOHOLISM IN ACTIVE MILITARY?**
*Lead Author: Felicitas Koster, D.O.*
*Co-Author(s): Gwen Levitt, D.O., James Palmer, D.O., Jennifer Weller, Ph.D.*

**SUMMARY:**
Background: Active duty military service members (SMs) have a high rate of alcohol use compared to even those most at risk in the general population. The military is making efforts to address SMs' use of alcohol by making interventions more accessible; however, treatment may not be optimal. There are currently four FDA-approved medications for the treatment of alcohol dependence and maintenance of abstinence, along with clinical practice guidelines for medical professionals. Although medication alone is rarely sufficient for successful treatment of alcoholism, this adjunct intervention may be underutilized in light of the detrimental effects that alcoholism has on health, social interactions, finances, and career. Especially in the military arena, use of these medications has been slow to gain popularity.
Methods: Researchers examined demographic and clinical variables, including diagnoses and medications, from 121 SMs admitted between 2012 and 2013 to an inpatient psychiatric community hospital specializing in treatment of active military.
Results: In the sample, 45% of SMs carried a diagnosis of an alcohol use disorder. Thirty percent of SMs had co-occurring psychiatric disorders. None of the SMs were prescribed any FDA-approved medication to promote alcohol abstinence, and only two out of 54 were discharged with such prescriptions. Data from the VA from 2000 to 2012 showed that the third leading cause of mental health-related hospital admissions of SMs was alcohol use disorders. Among patients treated by the VA from 2007 to 2009 for alcohol use disorders, only 3% in primary care settings were prescribed medications for alcohol dependence, while 7% were prescribed such treatment, in an addiction specialty clinic. Use of medications varied widely among VA facilities.
Conclusions: Current findings among SMs with an alcohol use disorder treated at a community hospital concurred with the current reported low utilization rates of FDA-approved medications for alcoholism. Given the high percentage of alcohol use disorders among SMs, especially if their problems are serious enough to require psychiatric hospitalization, and the low utilization of available approved medications for this disorder, the question of why they are not used more often is of interest. Treatment centers specializing in addiction generally prescribe

such medication at higher rates, but overall prescription rates remain low considering the multitude of clinical guidelines recommending their use. Evidence-based research shows that these medications can facilitate abstinence, especially when combined with other interventions or when other treatment approaches have failed. Given alcoholism's detrimental effects, continued research efforts aimed at identifying barriers associated with the utilization of medications for alcohol use disorders among military personnel might be beneficial to improving response to treatment.

**NO. 166**

**BLOOD ESSENTIAL FATTY ACID LEVELS IN PATIENTS WITH ADHD: A META-ANALYSIS**

*Lead Author: Laura Lachance, B.Sc., M.D.*
*Co-Author(s): Dr. Kwame McKenzie, M.D.*

**SUMMARY:**

Background:
Attention deficit hyperactivity disorder (ADHD) is a common mental disorder, which is frequently diagnosed in childhood and adolescence. This condition is associated with decreased academic and social functioning in the long term, as well as various other mental health issues. An association between abnormal tissue levels of essential fatty acids, such as omega-3 fatty acids, and ADHD has been present in the literature since the 1980s. However, there has been inconsistency with regards to which fatty acids are measured in which tissues. In addition, clinical trials investigating the efficacy of essential fatty acid supplements in the treatment of ADHD have yielded mixed results.
More recently, there has been an increased interest in the omega-6 to omega-3 fatty acid ratio. This ratio has important implications for the normal development and function of the brain, as well as for systemic inflammation. In contrast to omega-3 fatty acids, omega-6 fatty acids are highly prevalent in the western diet and have been shown to have pro-inflammatory effects. As well, high levels of omega-6 fatty acids can interfere with the functioning of omega-3 fatty acids (Simopoulos, AP, 2011). One hypothesis for why omega-3 supplementation studies in ADHD have failed to consistently yield positive results may be because none of the studies have limited omega-6 fatty acid consumption. Our study seeks to characterize the abnormal blood levels of essential fatty acids found in patients with ADHD based on the available literature. Specifically, we also seek to determine whether there is an elevated blood omega-6 to omega-3 fatty acid ratio in patients with ADHD.
Methods:
A systematic literature review was performed to identify all original articles that measured essential fatty acids in the blood of patients with ADHD. Three databases were used: Ovid MEDLINE, Psych INFO, and Embase, dating back to 1946. Forward tracking and backward tracking was undertaken on retrieved papers. A meta-analysis was performed of specific fatty acid levels and reported according to MOOSE guidelines.
Results:
24 original articles were identified. The current review is in progress therefore we will not report on preliminary data here. The project will be completed before the APA annual general meeting in 2014.
Conclusions:
This review will characterize the abnormal levels of essential fatty acids in the blood of patients with ADHD, including whether the omega-6 to omega-3 ratio is elevated. This information will be used to inform future research designs, and will potentially contribute to the development of a biomarker that can be used to inform and monitor treatment of ADHD.

**NO. 167**

**STRESS AND INFLAMMATORY SKIN CONDITION**

*Lead Author: Argentina Leon, M.D.*
*Co-Author(s): Gabrielle Brown, Eric Sorenson, Mona Malakouti, Eva Wang, Monica Huynh, Ethan Levin, John Koo, Josie Howards, Ph.D*

**SUMMARY:**

Introduction: Stress is inevitable in daily life and is often overlooked as being one of the key players in psychodermatology. Stress can be caused by major stressful life events (eg, separation of a loved one, financial difficulties, or death), psychological or personality difficulties, or lack of social support. Often times, stress can manifest itself as an inflammatory skin condition, such as psoriasis or eczema. Normal physiologic response to stress involves activation of the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic adrenomedullary (SAM) axis, both of which can regulate the immune system. Overall health is maintained when these two systems work in harmony. It has been shown that acute experimental social stressors resulted in significant lower serum cortisol responses for psoriasis patients who classified their psoriasis as being responsive to stress. The impaired cortical response to stress resulted in an upregulation of proinflammatory cytokines, thus exacerbating inflammatory skin conditions. We present a case report of a patient that experienced a relapsing-remitting disease course that correlated with levels of physical and emotional stressors.
Clinical Presentation: This is a case report of a 64-year-old Russian male with a 20-year history of severe psoriasis involving his scalp, trunk and extremities who presented with worsening pruritis. He reported increased stress at home due to financial situation and his son's drug addiction that subsequently led to a flare of his psoriasis. The patient was consequently admitted to the inpatient Goeckerman Program, which is an intensive treatment for psoriasis that involves daily crude coal tar and topical steroid application combined with phototherapy treatment for 6 weeks. By Day 7, patient had an 80% reduction in erythema and complete resolution of pruritis. However, on Day 17, he was physically abused by his son who was under the influence of alcohol and methamphetamine. The following day the patient experienced a flare of his psoriasis as well as a decline in psychological well-being characterized by a depressed mood, decreased appetite, and feelings of hopelessness. He denied suicidal thoughts or plans. The patient was referred to psychiatry for further evaluation and medical management. He was also referred for cognitive therapy and counseling.
Discussion: This case highlights the different physical and psychological manifestations of stress. First, it can exacerbate inflammatory skin disorders, such as psoriasis. It may also delay the healing process of a physiologic condition. Second, it can also trigger depressive symptoms, such as decreased sleep, depressed mood, decreased appetite, and anhedonia. Physicians should be mindful to take a detailed social and psychiatric history in every patient who presents with medical conditions.

**NO. 168**

**THE IMPACT OF CO-OCCURRING ANXIETY DISORDERS ON DEPRESSION TREATMENT OUTCOMES AMONG LOW-INCOME LATINOS RECEIVING A COLLABORATIVE CARE INTERVENTION**

*Lead Author: Simone T. Lew, B.A., M.S.*
*Co-Author(s): Megan Dwight-Johnson, M.D., M.P.H, Isabel T. Lagomasino, M.D., Christianne J. Lane, Ph.D.*

**SUMMARY:**
Background: Co-occurring anxiety is prevalent among patients with depressive disorders, especially among low-income Latino populations with high rates of trauma. However, there is little research available on the impact of anxiety disorders on depression treatment outcomes. This study examined the effects of anxiety on depression treatment outcomes among low-income Latino primary care patients.
Methods: Data were analyzed from a randomized controlled effectiveness trial that compared collaborative care for depression to enhanced usual care. Between November 2005 and July 2007, 339 Latino patients from three public sector primary care clinics in Los Angeles were enrolled. Patients were eligible if they had probable major depressive disorder or dysthymia, determined using the Patient Health Questionnaire-9 (PHQ-9) and PRIME-MD; exclusion criteria included probable bipolar disorder, psychotic disorder, cognitive impairment, or active suicidal ideation. A baseline survey in English or Spanish assessed for probable comorbid generalized anxiety disorder, panic disorder and post-traumatic stress disorder using the PHQ-9 and the 4-item version of the Patient Checklist-Civilian Version. Patients were randomized to a 16 week collaborative care depression intervention (patient education and choice of antidepressants, cognitive-behavioral therapy, or both) vs. enhanced usual care. Follow-up surveys at 16 weeks assessed services use and depression outcomes. Logistic regressions examined the impact of comorbid anxiety on intervention effects on depressive symptom severity, response and remission, as well as health-related quality of life using the Short Form-12 (SF-12). Analyses also compared use of antidepressants and therapy among intervention subjects with and without anxiety.
Results: The mean age of subjects was 49.8; they were 84% women, 77% primarily Spanish-speaking, 56% with < 6 years education, 63% unemployed, and 62% uninsured. The mean PHQ-9 score was 17.3, indicating moderately severe depression; 61% had likely comorbid anxiety disorder; 66% had >3 chronic medical illnesses. At 16 weeks, intervention subjects had significantly lower mean PHQ-9 scores, higher rates of treatment response and remission, and improved SF-12 scores. Among them, 84% received some treatment; most chose therapy (44% received therapy plus antidepressants, 38% only therapy, 3% only antidepressants). Further analyses will examine whether comorbid anxiety moderated the effect of the intervention on depression outcomes, and whether intervention subjects with anxiety were more or less likely to receive care.
Conclusion: A collaborative care depression intervention may have similar benefits over enhanced usual care for depressed Latino primary care patients with and without anxiety. Even among a highly underserved population with high rates of comorbid anxiety and trauma, a short-term collaborative care depression intervention can improve clinical outcomes and quality of life.

**NO. 169**

**QUALITY OF LIFE IN PATIENTS WITH INTERSTITIAL LUNG DISEASE: A ROLE FOR CONSULTATION-LIAISON PSYCHIATRY**

*Lead Author: Molly Lubin, M.D.*
*Co-Author(s): Hubert Chen, M.D., Brett Elicker, M.D., Kirk D. Jones, M.D., Harold R. Collard, M.D., Joyce S. Lee, M.D.*

**SUMMARY:**
Quality of life in patients with interstitial lung disease: a role for consult liaison psychiatry.
Background: Patients with interstitial lung disease (ILD) have poor health-related quality of life (HRQL). Some studies have suggested that degree of pulmonary impairment is not the only significant driver of poor HRQL in ILD but that other factors such as dyspnea, depression, and age, matter (1,2). However, whether HRQL differs among different subtypes of ILD is unclear. The aim of this study was to determine whether HRQL was different among patients with idiopathic pulmonary fibrosis (IPF) and chronic hypersensitivity pneumonitis (CHP) and, if so, to isolate the patient or disease-specific factors responsible for this difference.

Methods: We identified subjects from an ongoing longitudinal cohort of ILD patients. HRQL was assessed using the SF-36v2 medical outcomes form. Regression analysis was used to determine the association between clinical co-variates and HRQL, primarily the physical component summary (PCS) and mental component summary (MCS) score. A multivariate regression model was created to identify potential co-variates that could help explain the association between the ILD subtype and HRQL.
Results: IPF patients (n=102) were older and more likely to be men. Pulmonary function was similar between the two groups. The CHP patients (n=69) had worse HRQL across all eight domains of the SF-36, as well as on the PCS and MCS (p-value <0.01–0.09). This pattern remained after controlling for age and pulmonary function (p-value <0.01–0.02). Co-variates explaining part of the relationship between disease subtype and PCS score included severity of dyspnea (p-value <0.01) and fatigue (p-value 0.01). Co-variates explaining part of the relationship between disease subtype and MCS score included severity of dyspnea (p-value <0.01), female sex (p-value 0.02), and fatigue (p-value 0.02).
Conclusion: HRQL is greatly impaired in both conditions, but is worse in CHP as compared to IPF. This difference seems to be driven largely by more severe dyspnea and fatigue in CHP. It is unclear why CHP patients experience these symptoms to a greater degree than IPF patients, even when controlling for age and pulmonary function. Our findings point toward the need for collaboration between pulmonologists and psychiatrists, both in exploring the biopsychosocial factors that contribute to greater symptom burden in CHP as compared to IPF, and in helping these patients cope with such symptoms in the face of often irreversible lung impairment.
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nary fibrosis: a systematic review. Thorax, 2005. 60(7): 588-594.

**NO. 170**

**PICTURES SPEAK MORE THAN A THOUSAND WORDS: ART THERAPY IN A PATIENT WITH BIPOLAR DISORDER. A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Subani Maheshwari, M.D.*
*Co-Author(s): Ashley Ordner, M.A., Carolina Retamero, M.D.*

**SUMMARY:**

Introduction:
Art therapy is defined by the American Art Therapy Association as "a mental health profession in which clients, facilitated by the art therapist, use art media, the creative process and the resulting artwork to explore their feelings, reconcile emotional conflicts, foster self awareness, manage behavior and addictions, develop social skills, improve reality orientation, reduce anxiety and increase self esteem. A goal in art therapy is to improve or restore a client's functioning and his or her sense of personal well-being." Art therapy engages the patient and allows the release of emotional tension in a contained way. Mental illnesses and creative art work are often linked. Art historians and therapists have studied the work of many artists that demonstrated how the themes and colors reflected the artist's state of mind.
Objectives:
1. Encourage clinicians to help the patients engage in art therapy.
2. Enhance the use of art therapy for the psychological and emotional well being of the patients.
3. Utilize art therapy as a non verbal means of communication for challenging patients.
Case Report:
Ms. A is an 81 year old nursing home resident who was admitted at the inpatient Geriatric Psychiatry unit with an acute exacerbation of bipolar disorder type 1. Her hospital course demonstrated extreme mood lability and thought perseverations of religious and homosexual content. On admission, risperidone was resumed and valproic acid was added for mood lability. Besides pharmacotherapy she participated in art therapy which demonstrated fluctuations in her mood and thought content, even during difficult times when she was selectively mute. Once the patient's interest in art was identified she was encouraged to engage in free expression and her work was closely observed by a trained art therapist.
Method:
A written consent was obtained from the patient to exhibit her drawings which were edited to remove all identifiable information. A pub med search was conducted using the keywords mental illness and art therapy.
Discussion:
Art therapy can serve as a means of symbolic speech for those who have difficulty expressing their emotions. In Ms. A's case, the initial drawings highlighted her preoccupations with religion and homosexuality. Further into her hospitalization a positive change in her mental status was observed in her drawings with a switch to non-aggressive themes, lighter shades of color and smooth strokes.
Conclusion:
Art therapy is an inexpensive, non pharmacological intervention which has been shown to help patients mitigate some of their stress. Although art therapy can't substitute pharmacotherapy, it can be utilized for patients who are not agreeable to pharmacotherapy and those with cognitive deficits who are unable to participate in other forms of therapy. Clinicians and therapists should identify such patients in which art therapy can help recognize and mitigate symptoms of psychiatric illnesses.

**NO. 171**

**PDE-4 INHIBITION RESCUES ABERRANT SYNAPTIC PLASTICITY IN DROSOPHILA AND MOUSE MODELS OF FRAGILE X SYNDROME**

*Lead Author: Sean M. McBride, M.D., Ph.D.*
*Co-Author(s): Catherine H. Choi1, M.D., Ph.D., Brian P. Schoenfeld, B.A., Aaron J. Bell. Ph.D, Joseph Hinchey, Ph.D., Richard J. Choi, B. A., Paul Hinchey, B.S., Maria Kollaros, M.S., Michael J. Gertner, M.S., Neal J. Ferrick, B.A., Allison M. Terlizzi, B.A., Newton H. Woo, Ph.D., Michael R. Tranfaglia, M.D., Steven Arnold, M.D., Steven J. Siegel, M.D., Ph.D., Thomas V. McDonald, M.D., Thomas A. Jongens, Ph.D.*

**SUMMARY:**

Fragile X syndrome is the leading cause of intellectual disability and autism resulting from a single gene mutation. Previously, we characterized social and cognitive impairments in a Drosophila and mouse models of Fragile X syndrome and demonstrated that these impairments were rescued by treatment with metabotropic glutamate receptor (mGluR) antagonists or lithium. In the mouse model of Fragile X a well-characterized phenotype is enhanced mGluR-dependent long-term depression (LTD) at Schaffer collateral to CA1 pyramidal synapses of the hippocampus. Herein, we have now identified a novel drug target in the mGluR signaling pathway, phosphodiesterase-4 (PDE-4), and demonstrate PDE-4 inhibition as a therapeutic strategy to ameliorate memory impairments in the Drosophila model of Fragile X. We confirm this result with genetic manipulation of PDE-4 in the Drosophila model. Furthermore, we examine the effects of PDE-4 inhibition by pharmacologic treatment in the Fragile X mouse model. Acute inhibition of PDE-4 by pharmacologic treatment in hippocampal slices rescues the enhanced mGluR-dependent LTD phenotype. Additionally, chronic treatment of Fragile X mice in adulthood with a PDE-4 inhibitor for eight weeks also restores the level of mGluR-dependent LTD to those observed in wild type (WT) animals. Translating the findings of successful pharmacologic intervention from the Drosophila model into the mouse model of Fragile X syndrome is an important advance, in that this identifies and validates PDE-4 inhibition as potential therapeutic intervention for the treatment of individuals afflicted with Fragile X syndrome.

**NO. 172**

**PTSD: AN OVERVIEW OF THE EFFECTS OF EXILE-RELATED STRESS AND TRAUMA ON REFUGEE POPULATIONS**

*Lead Author: Aida Mihajlovic, M.D., M.Sc.*
*Co-Author(s): Joanne Orfei, PGY 1 MCW, Kristina Mihajlovic, Post Bach. Dominican University,Brett Wolfson, MS4 Midwestern University*

**SUMMARY:**

Brain involvement in relation to PTSD has been a focus of

exploration for several years. The amygdala, hippocampus, and medial prefrontal cortex have been introduced as major characters implicated in the pathophysiology of PTSD.
This biologically centered investigation appears to be a logical turn of focus as Yehuda and LeDoux 2007 point out that an innate genotypic distinction must be involved since not all individuals exposed to trauma develop PTSD. Equal energy has also been brought to further understanding the behavioral manifestation of PTSD. It is a clinical syndrome traditionally defined in the DSM-IV under anxiety disorders. However, with the dawning of the DSM-V, trauma and stressor-related disorders has been approved as a new home for PTSD. The move away from anxiety disorder is not the only change that will take place. In light of the research that has taken place in the behavioral realm in regards to PTSD, an emphasis on specifically defining the limited range of affect in those suffering from PTSD has been recognized as necessary. Specifically, the persistent inability to experience positive emotions is of importance.
The motivation for the former DSM-IV "numbing symptoms" classification to be clarified is a result of studies such as that conducted by Spahic-Mihajlovic, Crayton and Neafsey in 2005. They sought to dissect the numbing aspect in Bosnian refugees. Their results revealed that blunting of arousal was limited to pleasant imagery. This study recognizes that it would be most useful to explore this in other ethnic groups. We sought to replicate the measures in Bhutanese refugees with PTSD. The refugees were selected from Wheaton, IL through the World Relief Center. They were screened to have no other Axis 1 diagnosis. The method involved Looking at Pictures to measure emotional affect. Subjects were presented 21 photographs ranging from unpleasant, to neutral, to pleasant. They rated the photos on another scale called the Self Assessment Manikin (SAM) to indicate both the emotional valence of the photo and the emotional arousal that the image makes them feel.
The findings are consistent with the previous work done with Bosnian refugees suggesting a universal insight and defense to the DSM V clarification of the "numbing" description previously attributed to PTSD. Dr. Friedman, the work-chair of the group that was reexamining PTSD criteria for DSM V, who stated in an interview that the inability to experience positive emotions "is devastating to marriages and relationships," echoes our main motivation.
This may be especially straining on a population displaced from their country of origin and relying on their family unit for social ties. It is in our best interest to educate ourselves about how refugees experience PTSD in order to address their symptoms in treatment. A thorough understanding of the behavioral manifestation of PTSD is a useful compliment and source of further explorations.

**NO. 173**

**PAIN PROCESSING IN SCHIZOPHRENIA AND BIPOLAR DISORDER: A NEUROPHYSIOLOGICAL STUDY OF PAIN PATHWAYS WITH LASER EVOKED POTENTIALS (LEPS)**

*Lead Author: Amedeo Minichino, M.D.*
*Co-Author(s): Delle Chiaie Roberto., M.D., Bersani F. Saverio, M.D., Andrea Truini, M.D., Serena Piroso, M.D., Francesconi Marta, Ph.D., Primavera Martina, M.D., Cruccu Giorgio, M.D., Biondi Massimo, M.D.*

**SUMMARY:**

Introduction
A number of clinical observations indicate that pain processing might be disturbed in schizophrenia (SCZ); these alterations have been associated with the severity of positive and negative symptoms. The experience of pain consists of both sensory-discriminative and affective-motivational aspects, the first mainly processed in the secondary somatosensory area, the latter in cingulate and insular cortices. Several studies showed that areas involved in pain processing present similar functional and structural impairments in SCZ and Bipolar Disorder (BD), leading to shared psychopathological features. Given the above, the objective of the study was to investigate pain perception in SCZ and BD patients through laser-evoked potentials (LEPs) and the relations between pain perception, psychopathological features and theory of mind abilities.
Methods
18 patients with SCZ, 18 patients with BD type I, 18 patients with BD type 2 and 18 healthy subjects have been enrolled in the study.The three groups of patients were under similar pharmacological treatment (valproic acid or lithium and one atypical antipsychotic between olanzapine, risperidone or quetiapine). All participants underwent quantitative sensory testing (QST), right hand Laser Evoked Potentials (LEPs), Positive and Negative Syndrome Scale (PANSS) and the Reading the Mind in the Eyes Test (RMET).LEPs elicit temporally-distinct cortical responses mainly reflecting the activity of the secondary somatosensory cortex (LEPs N1 wave) contralateral to the stimulated side and of the bilateral insular and cingulate cortices (biphasic N2/P2 complex).
Results
SCZ patients showed a significant ($p<0.05$) amplitude decrease of biphasic N2/P2 complex and N1 wave compared to the healthy comparison group. The BD-I group showed a similar decrease in the biphasic N2/P2 complex, but not in the N1 wave compared to the healthy subjects. BD-II and healthy subjects LEPs did not show any significant difference. Positive symptoms and RMET total score negatively correlated with N2 amplitude values in both SCZ and BD 1 patients ($p<0.05$).
Discussion
To our knowledge, this is the first study aimed at directly evaluating the two different pathways of pain perception in SCZ and BD patients. SCZ group showed an impairment of both sensory-discriminative and affective-motivational pathway while BD-I group showed a less marked but significant impairment only in the second one. BD-II patients, under similar pharmacological treatment of BD-I and SCZ patients, presented LEPs comparable to those of healthy subjects; for this reason we can reasonably assume that LEPs differences observed in the three groups are not attributable to the effects of drugs. Pain processing impairments significantly correlated with critical psychopathological features such as positive symptoms and ToM abilities both in BD and SCZ patients, supporting the idea of a potential common neurobiological impairment underlying both the disorders.

**NO. 174**

**RELATIONSHIP BETWEEN CYTOKINES LEVELS AND PSYCHIATRIC MEASURES IN MEN WITH ALCOHOLISM**

*Lead Author: Rohini Negi, M.D.*
*Co-Author(s): Albert B. Poje, PhD; Elizabeth C. Penick, PhD; Merlin G. Butler, MD, PhD; Ann M. Manzardo, PhD*

**SUMMARY:**
Objectives: Cytokines are small proteins that regulate immunological and hormone responses, inflammation, and wound healing. Chronic alcohol use alters adaptive immunity influencing cytokine activity. Increased inflammatory cytokines in the brain can impair neurological function impacting mood, cognition and traits related to alcoholism including impulsiveness. We examined the relationship between plasma cytokine levels and psychiatric measures in alcoholism. Methods: Peripheral blood samples were obtained from 30 adult males (mean age 47±8yrs; range 21-59yrs) from the Kansas City area who met DSM-IV-TR criteria for current Alcohol Dependence and 20 age-matched control males from a blood collection unit with no self-reported history of alcoholism. Alcohol dependent males were given psychometric tests including the SCL-90-R, Barratt Impulsivity Scale (BIS) and a derived alcoholism severity scale (ASS). Plasma was separated and frozen within 30 minutes of collection. Cytokine levels were determined using multiplex sandwich immunoassays with the Milliplex Human 42 Cytokine/Chemokine Premixed Kit (Millipore; Billerica, MA) according to manufacturer's protocols and using Luminex magnetic-bead technology (Luminex Molecular Diagnostic; Toronto, Canada). Plasma cytokine concentrations were calculated using a standard curve. Log-transformed values with at least two-thirds of samples in the detectable range were analyzed using Pearson correlation and ANOVA adjusted with Bonferroni correction for multiple comparisons.
Results:Twenty-three of the 42 cytokines met criteria for inclusion. GCSF, sCD40L and GRO were significantly reduced in alcoholics compared to controls while IP-10, MCP1 and RANTES (CCL5) were significantly elevated. ASS was negatively correlated ($p<0.05$) with levels of IL-17, IL-12(p70), FGF2, Fractalkine, and MCP3. GRO was positively correlated with total impulsiveness ($r=0.34$, $p<0.05$), non-planning impulsivity ($r=0.37$, $p<0.05$), attentional impulsivity ($r=0.31$, $p<0.05$), cognitive control ($r=0.36$, $p<0.05$) and complexity ($r=0.43$, $p<0.01$). RANTES was positively correlated with cognitive control ($r=0.43$, $p<0.01$) and total impulsiveness ($r=0.41$, $P<0.01$). The effects of GRO and RANTES were also significant after controlling for effects of alcoholism severity and race. Conclusion: Plasma cytokine disturbances were observed in alcoholism and correlated with alcoholism severity. The results suggest a generalized suppression of bone marrow derived hematopoietins and chemokines in severe alcoholism. Elevation of inflammatory mediators may influence brain function leading to increased impulsiveness. RANTES, a chemotactic cytokine that regulates the activity of normal T cell expression and secretion, was elevated in alcoholism and correlated with increased impulsivity which could propagate abuse behaviors. More research is needed to investigate the possible role of RANTES in alcoholism and other psychiatric conditions with core impulsivity phenotypes.

**NO. 175**
**HIV-ASSOCIATED COGNITIVE IMPAIRMENT AND TREATMENT-RESISTANT DEPRESSION**
*Lead Author: David A. Nissan, M.D.*
*Co-Author(s): Sam J. Boas, B.S. Faith Gunning-Dixon, Ph.D. Stephen J. Ferrando, M.D. Marc Dubin, M.D., Ph.D.*
*Julie B. Penzner, M.D.*

**SUMMARY:**
Identifying the potential role of depression and HIV-related factors in the cognitive and affective symptoms in patients with major depression and comorbid HIV is challenging. It is even more so when a patient suffered from major depression prior to contracting HIV. HIV-associated cognitive impairment may interact with and/or compound the cognitive deficits that often are present in individuals suffering from a treatment refractory major depressive episode. Here we present a patient with longstanding recurrent major depression and comorbid, although well controlled, HIV whose depression was increasingly treatment refractory in the decades after his HIV diagnosis. Neuropsychological and laboratory testing were consistent with HIV-associated cognitive impairment. Neuropsychological testing revealed prominent psychomotor slowing, mild to moderate deficits in visual spatial functions (visual spatial integration, visual learning and recall), mild deficits in select executive functions (switching, cognitive inhibition, self-monitoring), mild anomia, and mildly halting speech. Basic attention, verbal learning and recall were within normal limits. The pattern of deficits and the reported course were not consistent with major depression alone, but more reflective of a combination of the cognitive deficits associated with treatment refractory major depression and HIV related cognitive dysfunction. Although viral load was low in both the CSF and serum, CSF viral load was higher (52 compared to 25 copies/ml), and MRI showed moderate cerebral atrophy. Aggressive treatment with an MAOI (isocarboxazid), antipsychotic augmentation and ECT had been ineffective in the current depressive episode. We treated the patient with a course of 25 sessions of TMS over the left dorsolateral prefrontal cortex. The patient's mood symptoms responded to TMS; however, they did not remit. His cognitive symptoms were neither improved nor exacerbated. In light of his severely treatment refractory depression, we considered the possibility that his long-standing HIV infection, and inflammatory damage to the frontal cortex and deep brain structures, made this patient less responsive to treatments for his depression. This observation suggested an additional treatment approach that could be pursued in parallel with TMS: changing the HAART regimen to increase BBB penetration. We conclude that there should always be a high suspicion for cognitive decline in depressed patients with comorbid HIV and that neuropsychological and CSF VL testing should be considered in these patients. Studies indicate that changing to a HAART regimen with better CNS penetration to target cognitive function improves the treatment of depressive symptoms in this population.

**NO. 176**
**PATIENT FACTORS THAT PREDICT NO RESPONSE TO A BRIEF INTERVENTION FOR ALCOHOL-EXPOSED PREGNANCY RISK**
*Lead Author: Abhishek R. Nitturkar, M.B.B.S.*
*Co-Author(s): Karen S. Ingersoll Ph.D.*

**SUMMARY:**
Background: Alcohol–exposed pregnancy (AEP) is a leading cause of preventable birth defects including Fetal Alcohol Spectrum Disorders.Several interventions based on Motivational Interviewing with Feedback are efficacious and reduce the risk of AEP in community and college women.They were not efficacious in some women who remained at risk for AEP. The pur-

pose of the present study was to identify factors that predicted a failure to respond to a single session AEP intervention.
Methods: Women at Risk for AEP (n= 217) were randomized to Motivational Interviewing + Feedback (EARLY), video, or brochure conditions. Interventions resulted in decreases in drinks per drinking day (DDD), ineffective contraception rate, and AEP Risk at 3 and 6 months. Participants in EARLY had significantly larger absolute reductions in ineffective contraception and AEP risk, but not DDD.3 Using the parent study data, we examined demographic, psychological, and behavioral variables that might relate to no change in risky behaviors. We first analyzed the univariate relationships to AEP risk at 6M, using one-way ANOVAs and Chi-Square tests to identify7 candidate baseline variables: mean standard drinks per week, number of binges, DDD, smoking status, DSM-IV alcohol abuse and dependence measured with the M.I.N.I, and self-efficacy (temptation) to drink. We then used a Stepwise Logistic Regression procedure to identify a multivariate model of AEP risk at 6M.
Results: The analytic sample included 143 women ages 18-44 with a mean age of 29, with 49% African-American, 38% Caucasian, 10% Other, and 3% Asian. All 7 variables were entered into the model, and those retained included average drinks per week (Odds Ratio=1.04; 95% Confidence Interval=1.00-1.07), smoking (reference level no) (Odds Ratio=.59, CI=.29-1.19), Alcohol Abuse (Odds Ratio=1.42, CI=.58-3.49), and Alcohol Dependence (Odds Ratio=2.025; CI=0.89 – 4.63). While all 4 variables remained in the model, only the mean standard drinks per week at baseline was an independent predictor of remaining at AEP risk at 6M after intervention.
Conclusions: A model including mean drinks per week, smoking, alcohol dependence, and alcohol abuse significantly predicted AEP risk at 6M. Women who drink regularly and show signs of alcohol abuse and dependence, and who engage in other risk behaviors may need a more intensive intervention than the single session interventions tested to achieve changes in drinking and/or contraception that reduce risk for an AEP. Women could be screened for these factors and triaged to a more intensive AEP risk reduction intervention, such as CHOICES. However, other factors must relate to treatment non-response; the current model explains 11 % of the variance. Further investigation of factors that lead to maximum treatment response should be identified. The clinical impact would be appropriate treatment-matching and use of limited intervention resources for women at risk for AEP.

**NO. 177**

**WORKING MEMORY CAPACITY AND EMOTIONAL REGULATION IN EUTHYMIC PATIENTS WITH BIPOLAR I DISORDER**

*Lead Author: Dong hun Oh, M.D.*
*Co-Author(s): Ra Yeon Ha, M.D., Tae Young Kim, M.D.. Seung Jun Kim, M.D., Ph.D. Su Jin Lee, M.A.*
*Hyeon Sook Ryu, M.A. Hyun Sang Cho, M.D., Ph.D*

**SUMMARY:**

Objects: Working memory is the system that actively holds multiple pieces of transitory information in the mind, where they can be manipulated. It has been suggested that people who had higher working memory capacity suppressed expression of negative emotion and positive emotion better than people lower in working memory capacity. In this study we assessed working memory capacity in euthymic bipolar patients and divided patients into higher versus lower capacity group. We hypothesized that patients with lower working memory capacity had poorer self-regulation of emotional expression.
Method: 43 euthymic bipolar I patients and 53 healthy persons were enrolled. All participants conducted operation span task (OSPAN task) for an assessment of their working memory capacity. In task, subjects were asked to perform a simple mathematical verification and then read a word, with a recall test following some number of those read pairs. To evaluate a self-regulation of emotional experience, participants were required to complete Emotion Regulation Questionnaire (ERQ), Cognitive Emotion Regulation Questionnaire(CERQ) and Difficulties in Emotion Regulation Scale (DERS).
Results: Euthymic bipolar patients had significantly lower scores of OSPAN task than healthy controls (p=0.007). When dividing patients into higher versus lower score group by OSPAN task scores and comparing two groups, we found that the lower score group had worse on total score of ERQ and scores of subitems in CERQ than the higher score group.
Conclusion: These preliminary results suggest that bipolar patients with lower working memory capacity tend to feel more difficult to control and suppress their negative emotion than patients higher in working memory capacity.
KEY WORDS: Working memory capacity· Bipolar Disorder· Emotional regulation

**NO. 178**

**LONGITUDINAL OBSERVATION OF THE RELATIONSHIP BETWEEN BRIEF LOSS OF CONSCIOUSNESS AND HEALTH CONDITION AFTER MOTOR VEHICLE COLLISION**

*Lead Author: Elizabeth F. Olds, B.Sc.*
*Co-Author(s): Lauriane Auvergne, B.Sc., Karen Brenner, R.N., Kristopher R. Brickman, M.D., F.A.C.E.P., Benjamin D. Duncan, B.Sc., Israel Liberzon, M.D., Samuel A. McLean, M.D., M.P.H., Marijo B. Tamburrino, M.D., John Wall, Ph.D., Xin Wang, Ph.D., M.D., Sherry Watson, M.S.N., R.N., C.C.R.N., Hong Xie, M.D., Ph.D.*

**SUMMARY:**

Introduction:
Brief loss of consciousness (< 30 minutes LOC) after motor vehicle collision (MVC) is one of the neural symptoms that may indicate mild traumatic brain injury (mTBI) or high levels of traumatic stress. Many MVC survivors suffer from post-concussive (PC) symptoms as well as mental health complications, such as posttraumatic stress disorder (PTSD) and depression in initial months. However, few studies have examined the relationship between brief LOC and progressive changes in neurological and psychiatric symptoms after MVC. The current study longitudinally assesses PC symptoms, symptoms of posttraumatic stress and depression in MVC survivors with minor physical injury over the initial post-collision 3 months. Symptoms were compared between survivors who experienced brief LOC and survivors who did not experience any concussive symptoms (i.e., LOC, post-traumatic amnesia (PTA), disorientation, dizziness, or headache) immediately after MVC.
Methods:
MVC survivors were recruited from local Emergency Departments (EDs). Self-report inventories completed in the EDs and at home at 2, 4 and 12 weeks after MVC provided information on PC symptoms [12 symptoms from the Rivermead Post-Con-

cussion Symptoms Questionnaire: headache, dizziness, nausea, noise sensitivity, fatigue, insomnia, poor concentration, taking longer to think, blurred vision, light sensitivity, double vision, and restlessness], traumatic stress symptoms [PTSD Check List -Stressor Specific Version (PCL)], depression [Center for Epidemiological Studies – Depression Scale (CES-D)], and anxiety [State-Trait Anxiety Inventory (STAI)]. LOC and other concussive symptoms were collected from medical records and ED questionnaires. Univariant analyses (UNIANOVA) controlling for age and gender, were used to compare symptomatic differences at each time point between LOC and no-concussion groups.
Results:
17 subjects (9 female/8 male, age 33±13 years) who experienced brief LOC and 39 subjects (22 female/17 male, age 36±13 years) who were free of any concussive symptoms participated in this study. The majority of subjects in the LOC group also reported PTA (n=10). The LOC group had significantly higher PCL ($P<0.01$), headache ($P<0.05$), and dizziness ($P<0.05$) scores in the initial two weeks. No other differences were found at each time point.
Conclusion and discussion:
The preliminary results suggest that brief LOC after MVC may be associated with higher levels of PC symptoms, such as headache and dizziness, and increased posttraumatic stress in the initial 2 weeks following MVC. However, brief LOC may not be associated with post-MVC symptoms in subsequent weeks. Examining the relationships between immediate traumatic symptoms (e.g., LOC) and the following of post-MVC health complaints may help to identify patients at high risk for specific post-MVC health complaints.

**NO. 179**

**RELATIONSHIPS BETWEEN CHRONOTYPES AND AFFECTIVE TEMPERAMENTS IN HEALTHY YOUNG ADULTS**

*Lead Author: Chunil Park*
*Co-Author(s): Jee In Kang, M.D., Ph.D., Hae Won Kim, M.D., Min Jung Koh, M.D., Kee Namkoong, M.D., Ph.D., Se Joo Kim, M.D., Ph.D.*

**SUMMARY:**
Backgrounds
Chronotypes have been known to have associations with mood disorders and temperamental features. The aim of this study is to investigate the relationships between diurnal preferences and affective temperaments.
Methods
A total of 607 college students (352 males, 255 females)(mean age; 22.42±2.98) completed the Composite Scale of Morningness (CSM) for diurnal preferences and the Temperament Scale of Memphis, Pisa, Paris and San Diego - Autoquestionnaire version (TEMPS-A) for affective temperaments, including cyclothymic, depressive, hyperthymic, irritable and anxious temperaments. Multivariate analyses of variance (MANOVA) were computed with the 5 affective temperaments as the dependent variables, and chronotypes as the independent variable.
Results
The distribution of subjects in the diurnal preference was 169 in the morning-type(M; 27.8%), 298 in the intermediate-type(I; 49.1%), and 140 in the evening-type(E; 23.1%). In male subjects, evening-type was significantly associated with higher values for depressive(E:7.13±3.62, I:6.77±2.95, M:5.78±2.35, $p=0.008$), cyclothymic(E:8.27±5.41, I:6.49±4.20, M:6.34±4.79, $p=0.009$), irritable(E:5.08±3.91, I:3.23±2.96, M:3.08±2.97, $p<0.001$) and anxious temperament(E:7.46±5.72, I:5.23±4.87, M:4.54±4.98, $p=0.001$), while morning-type was significantly associated with hyperthymic temperament(E:10.44±5.03, I:10.93±4.87, M:13.84±4.09, $p<0.001$). Female subjects also showed similar patterns that evening-type scored higher values for depressive(E:8.68±3.51, I:7.01±2.71, M:7.33±2.63, $p=0.001$), cyclothymic(E:9.31±4.96, I:8.13±4.86, M:7.06±4.12, $p=0.021$), and irritable temperament(E:5.08±3.98, I:3.90±3.45, M:2.93±2.69, $p=0.001$) and lower values for hyperthymic temperament(E:9.60±4.84, I:11.45±4.26, M:10.94±5.13, $p=0.039$) than morning-type.
Conclusions
The present study showed that chronotype is strongly related to affective temperaments. These findings suggest that circadian rhythm such as diurnal preference may be psychological predisposition of mood disorders.
Keywords: chronotype, morningness-eveningness, affective temperaments; TEMPS-A; mood disorder

**NO. 180**

**THE EFFECT OF TAKING A SPIRITUAL HISTORY ON PSYCHIATRIC CARE AND PRACTICE**

**Lead Author: Teleka C. Patrick, M.D., Ph.D.**
*Co-Author(s): Roberto Flachier, Ph.D., Michael R. Liepman, M.D., D.L.F.A.P.A.*

**SUMMARY:**
A spiritual history is an essential part of the psychiatric history, particularly in the United States, the most religious industrialized nation. In current psychiatric training, cultural competence has been emphasized; however, spiritual competence remains neglected. This, along with the nature of religion as a deeply personal matter, may cause discomfort when seeking to understand the role of a patient's spirituality in psychiatric care. Harold Koenig suggests that practitioners take a spiritual history, respect and support the patient's beliefs, challenge beliefs when unhealthy, and pray with patients or refer them to clergy. James Griffith described ways that religion may be supportive as well as detrimental to mental health. Christina Puchalski, an internist and geriatrician, devised an acronym for medical practitioners to use: FICA (Faith or Beliefs, Importance and Influence, Community, Address). It is my intent to advance this area of investigation by proposing specific questions in order to ascertain spiritual factors that may underlie, exacerbate, or palliate mental illness. In this pilot study, the spiritual histories of three inpatients were obtained by querying the following: 1) spiritual practices, 2) feelings about God/deity, 3) participation in a spiritual community, 4) pressing spiritual concerns, and 5) spiritually-related psychotic symptoms. In each case we determined whether recommendations for further care would have changed based on the additional information. The first patient was a 22-year-old African American male, diagnosed with bipolar I disorder, severe, admitted for a manic episode with psychotic features; the majority of his auditory and visual hallucinations were of demons attacking him. He explained that a change in his belief regarding the influence of spiritual entities in his life caused the hallucinations about demons to disappear altogether in 1-2 days (although other comforting hallucinations about family members remained). The second

patient was a 50-year-old Caucasian American male who was diagnosed with major depressive disorder, recurrent, severe, without psychotic features, with seasonal pattern. A spiritual history revealed that he was troubled by end-of-life concerns which were increasing in prominence with age. This patient had been referred for electroconvulsive therapy without any evaluation of these concerns. The third patient was a 34-year-old Caucasian American male, diagnosed with bipolar I disorder, severe, admitted for a manic episode with psychotic features. His auditory hallucinations included one comforting voice, which he designated as the voice of God, and which he desired to retain. This may have affected medication compliance as an outpatient. This pilot study illustrates that spiritual concerns may underlie and influence a patient's mental health, and should certainly be taken into consideration before making treatment recommendations that impact patients' lives in substantial ways.

**NO. 181**

**ALCOHOLISM SEVERITY INFLUENCES PSYCHIATRIC SYMPTOMATOLOGY AND TREATMENT RESPONSE TO BENFOTIAMINE IN MALES**

*Lead Author: Tiffany A. Pendleton, D.O.*
*Co-Author(s): Merlin G. Butler, M.D., Ph.D., Ann M. Manzardo, Ph.D., Elizabeth C. Penick, Ph.D., Albert B. Poje, Ph.D.*

**SUMMARY:**
Objective: Severe alcoholism can be associated with significant nutritional and vitamin deficiency, especially vitamin B1 (thiamine) which is associated with serious illness and neurological deficits influencing mood and cognitive functioning. Benfotiamine is a high potency thiamine analog under investigation to treat thiamine deficiency observed in alcoholism. The present study examines the influence of alcoholism severity and psychiatric symptoms in alcohol dependent men and the response of high and low severity groups to thiamine replacement. Methods: A randomized, double-blind, placebo-controlled trial was performed on 120 adult men and women from the Kansas City area meeting DSM-IV -TR criteria for current alcohol dependence. Subjects were randomized to receive 600 mg benfotiamine or placebo administered by mouth once daily for 24 weeks. All participants completed a derived Lifetime Alcoholism Severity Scale (ASS), Symptom Checklist-90-R (SCL-90-R), and Barratt Impulsiveness Scale (BI) at baseline and at 6 months. The relationship between ASS and psychometric status of men was examined at baseline using the Pearson Correlation Coefficient and ANOVA. The change in psychiatric symptoms associated with benfotiamine treatment was examined and the influence of ASS. Results: Male subjects (N=85, age 48±8 years) were predominately African American (71%) with a positive family history of alcoholism (82%) and a mean ASS of 23±5 (range 11 to 32). High lifetime alcoholism severity (ASS ≥24 based on median split) was associated with significantly increased baseline raw scores for most SCL-90-R subscales including: obsessive-compulsive (OCD, 1.8±0.8 vs 1.3±0.9, F=5.7, p<0.05); depression (1.7±0.8 vs 1.2±0.7, F=7.8, p<0.01); anxiety (1.4±0.8 vs 0.9±0.8, F=6.0, p<0.05); and phobia symptoms (0.9±0.8 vs 0.5±0.7, F=5.6, p<0.05). Baseline benfotiamine scores did not differ by ASS level, but SCL-90-R scores for all subscales were significantly reduced among completed subjects (N=50). A significant treatment by alcoholism severity interaction was identified for OCD [F=11.6, p<0.001] and phobia symptoms [F=12.1, p<0.001] with a greater reduction of symptoms observed with benfotiamine treatment in the high severity group. Measured motor impulsiveness did decrease significantly among completed subjects (t=3.5, p<0.01), but no significant effect of treatment was observed in our study. Conclusion: Alcoholism severity in males was associated with significantly increased baseline psychiatric symptomatology but not impulsivity. This may relate to alcohol toxicity or associated nutritional deficiency. Benfotiamine treatment did reduce anxiety and phobia symptoms in severe dependence possibly through alleviation of subclinical thiamine deficiency which may exacerbate alcohol toxicity or withdrawal effects. These results suggest benfotiamine may be useful to reduce psychiatric distress and facilitate recovery in severely affected males with lifetime alcohol dependence.

**NO. 182**

**BRAIN-DERIVED NEUROTROPHIC FACTOR AND AMYGDALA HABITUATION IN BORDERLINE PERSONALITY DISORDER**

*Lead Author: M. Mercedes Perez-Rodriguez, M.D., Ph.D.*
*Co-Author(s): M. Mercedes Perez-Rodriguez, M.D., Ph.D., Antonia S. New, M.D., Kim E. Goldstein, M.A., Daniel Rosell, M.D., Ph.D., Qiaoping Yuan, Ph.D., Zhifeng Zhou, Ph.D., Colin Hodgkinson, Ph.D., David Goldman, M.D., Larry J. Siever, M.D., Erin A. Hazlett, Ph.D.*

**SUMMARY:**
Introduction: Borderline personality disorder (BPD) is characterized by emotion-processing abnormalities. Elucidating its underlying neural systems and genetic modulators is crucial for refining testable models and developing personalized treatments. Amygdala hyper-reactivity and deficient habituation are putative endophenotypes of abnormal emotion processing in BPD, which are genetically modulated by brain-derived neurotrophic factor (BDNF) variants. The Met allele of the Val66Met SNP of the BDNF gene increases amygdala reactivity and impairs extinction learning, closely related to habituation. We used an imaging-genetics framework to examine for the first time in BPD patients the impact of BDNF Val66Met genotypes on amygdala habituation to repeated emotional and neutral stimuli.
Methods: We used event-related functional magnetic resonance imaging (fMRI) in 57 subjects (19 unmedicated BPD and 18 schizotypal personality disorder [SPD] patients and 20 healthy controls [HC]) during a task involving viewing of unpleasant, neutral, and pleasant pictures, presented twice. Amygdala responses were examined with a mixed-model multivariate MANOVA including BDNF Val66Met SNP genotype (Met-carriers vs. Non-Met carriers).
Results: A significant Diagnostic group×Genotype (BDNF 66Met-vs. Non-Met-carriers)×Picture type (unpleasant, neutral, pleasant)×Picture repetition (Novel/Repeat)×Time interaction indicated that Met-carrying BPD patients (but not Met-carrying SPD patients or HCs) showed exaggerated amygdala reactivity to repeated, but not novel, unpleasant pictures, representing a habituation deficit (F[40,64] = 1.68, p<0.04, Wilks).
Conclusions: Using imaging-genetics, we characterized the genetic underpinnings of an amygdala habituation deficit to emotional stimuli in BPD, which is restricted to those carrying the BDNF 66Met allele. This finding points to BDNF modulators as

a novel therapeutic avenue for BPD, which lacks FDA-approved medications.

**NO. 183**

**TRENDS, CARDIAC CATHETERIZATIONS, REVASCULARIZATION AND INPATIENT MORTALITY AFTER ACUTE MYOCARDIAL INFARCTION IN PATIENTS WITH MENTAL HEALTH DISORDERS**

*Lead Author: Trinadha Pilla, M.D.*
*Co-Author(s): Malathi Pilla, MD; Steve Scaife, PhD; Aghaegbulam Uga, MD; Obiora Onwuameze , MD,PhD ; Jeffrey I. Bennett, MD*

**SUMMARY:**
Objective: To investigate the trends, cardiac catheterizations, revascularization procedures and inpatient mortality after acute myocardial infarction (AMI) in schizophrenia, bipolar, anxiety and depressive disorders, compared with the general population.

Methods: Nationwide Inpatient Sample (NIS) database is a stratified inpatient discharges database in the United States. This database was used to perform a cross-sectional study from 2002 to 2011. Mental health disorders patients who had AMI were compared with a random sample of all other adults with AMI who had no mental illness. Receipt of cardiac catheterization and subsequently PTCA or CABG and finally inpatient mortality were compared in logistic regression models after adjusting for demographic, medical risk factors, hospital properties and AMI complications.
Results: Our study showed there has been a significant rise in AMI in psychiatric patients over the last 10 years across the whole country. There has been approximately a 50% decrease in ST segment elevation myocardial infarction (STEMI) in the general population and schizophrenia over the last 10 years. Whereas there has a been an approximately 30%,15% and 5% increase in STEMI for bipolar disorder, anxiety disorders and depressive disorders respectively during the same period. There has been an approximately 5% decrease in non - ST segment elevation myocardial infarction (NSTEMI) in the general population compared to a 30%,300%,150% and 200% increase in NSTEMI for schizophrenia, bipolar disorder, anxiety disorder and depressive disorder during the same period. From the year 2002 to 2011 a total of 1,711,162 adult patients who had AMI without any psychiatric disorders were identified. Patients with schizophrenia (n=6437), bipolar disorder(n=10,223),anxiety disorder (n=50,981) and depressive disorder (n=106,790) had a significantly decreased likelihood of catheterization (60%,45%,10%,30%, respectively) and revascularization (35%,35%,20%,35%, respectively) during a AMI compared with controls. In regards to inpatient mortality schizophrenia patients have 20% to 50% more likely, bipolar patients have about 20% less mortality, anxiety disorders 30% less mortality and depressive disorders have about 20% less mortality compared with the general population even when adjusted to various confounding covariates.
Conclusions: Even after adjusting for potential confounders including demographic features, risk factors, hospital properties and complications there were significant decrease in the rates of catheterizations and subsequent PTCA or CABG in patients with various mental disorders compared with the general population. Schizophrenia patients with AMI had significantly higher inpatient mortality unlike bipolar, anxiety and depressive disorders patients who had significant less inpatient mortality compared with the general population. These findings suggest discrepancies in outcomes that may benefit from further investigations.

**NO. 184**

**RTMS RESTORES INTERHEMISPHERIC FUNCTIONAL CONNECTIVITY OF AUDITORY CORTEX IN SCHIZOPHRENIA WITH AUDITORY HALLUCINATIONS: A CASE STUDY**

*Lead Author: Justin Powell, M.D.*
*Co-Author(s): G. Andrew James, PhD; Erick Messias, MD, PhD; Mark Mennemeier, PhD*

**SUMMARY:**
Introduction: Resting state functional MRI (rs-fMRI) is increasingly used to study the brain's intrinsic connectivity. {Beckmann, 2005; James, 2009; James, 2013}.
rs-fMRI has previously shown decreased connectivity of the left and right primary auditory cortex (Heschl's gyrus) in patients with schizophrenia experiencing auditory hallucinations {Shinn, 2013; Oertel-Knochel, 2013; Gavrilescu, 2010}. This investigation sought to model changes in functional connectivity of the auditory cortices following repetitive transcranial magnetic stimulation (rTMS) for treatment of auditory hallucinations.
Methods: We initiated a double blind, sham controlled, clinical trial comparing two locations (vertex and temporal cortex – BA22) and two frequency of stimulation (1 or 10 Hz). We report findings for one patient with schizophrenia and seven healthy control participants. Results: Consistent with previous reports, the baseline connectivity of left and right Heschl's gyrus was significantly lower for the patient with schizophrenia (r=0.04) than for healthy control participants (mean r=0.58; t(5)=22.1, p<0.0001). Connectivity of these two regions did not change with sham rTMS (r=0.04), increased with 1Hz and 10Hz rTMS (mean r=0.20), but diminished after a two month wash-out period (r=0.10). Discussion: This preliminary data suggests that rTMS can increase the functional connectivity of the primary auditory cortices to more closely resemble the connectivity observed in healthy subjects without schizophrenia. Future work will relate auditory cortex functional connectivity to therapeutic response to rTMS in a larger sample. Support comes from the Center for Translational Neuroscience, University of Arkansas for Medical Sciences (P20 GM103425).

**NO. 185**

**VULNERABILITY AND RESILIENCE IN RISK STATE FOR SCHIZOPHRENIA: SUB-THRESHOLD SYMPTOMS AND FRONTAL-STRIATAL NETWORK FUNCTION DURING EMOTIONAL APPRAISAL**

*Lead Author: Harinder Rai, B.A.*
*Co-Author(s): Vaibhav Diwadkar, Ph.D.*

**SUMMARY**:
Background:
Development of social and emotional function in adolescence relies on learning successful appraisal and memory for facial emotion cues. This processing may be impaired in children of schizophrenia (SCZ) patients, particularly those who display early sub-threshold negative symptoms. These symptoms

may be related to latent brain network dysfunction encoding aberrant salience to social signals. We applied Dynamic Causal Modeling (DCM) to fMRI data to investigate effective connectivity differences within the face processing network when subjects appraised and remembered facial valence. A significant advantage of DCM is the use of Bayesian methods to identify network architecture(s) in a competing space of architectures that are likeliest to have generated the observed fMRI data.
A particular focus of this work was to examine brain network differences in salience for facial valence (positive, negative or neutral) between our high-risk offspring (HR) with or without sub-threshold negative symptoms (HRNS+ and HRNS-).
Methods:
HR subjects (< 20 yrs; one parent diagnosed with SCZ) participated in an affective working memory fMRI task during which they were shown positive, negative and neutral faces and assessed the consistency in depicted valence between successive faces. fMRI data were modeled using 320 competing network architectures in an a priori face-emotion processing network (frontal gyrus, amygdala, basal ganglia and dorsal and ventral prefrontal cortices) with modulation by valence and task. Competing models were distinguished at a 2nd level using random effects Bayesian Model Selection (BMS).
Results:
BMS yielded a single winning model (exceedance probability: 98.9%), notable for contextual modulation of the dPFC⟷BG connection during appraisal and memory. Bayesian parameter averages of modulatory coupling estimates demonstrated distinct modulation of frontal-striatal connections between HRNS+ and HRNS- (Bonferroni correction, p<.001 applied to pairwise comparisons). Compared to HRNS-, in HRNS+, the dPFC⟶BG pathway was inhibited when appraising negatively valenced faces but excited when appraising positive faces.
Discussion:
Modulation of top-down brain pathways during emotional appraisal suggests control-related signaling by areas like the prefrontal cortex of other regions. Previous studies suggest exaggerated top-down inhibition in HR when appraising negative valence, reflecting attempts at maintaining "emotional homeostasis" in the risk state. Our results sharpen these studies, suggesting that inhibition is well predicted by sub-threshold negative symptoms. Over-compensation in brain networks in the risk state may be a plausible neurobiological signature of weakened resilience for mental illness related to frontal-striatal connectivity. Further application of advanced network analytic tools to fMRI data may provide significant insight into how genetic risk for schizophrenia impacts brain network function.

**NO. 186**

**THE IMPACT OF MATERNAL CHILDHOOD ABUSE ON OBSTETRICAL OUTCOME: A TRANSGENERATIONAL EFFECT**

*Lead Author: Veronica M. Raney, M.D.*
*Co-Author(s): Joshua M. Cisler, Ph.D., Shanti P. Tripathi, M.S., Christian Lynch, M.P.H., Bettina T. Knight, R.N., B.S.N., D. Jeffrey Newport, M.D., and Zachary N. Stowe, M.D.*

**SUMMARY:**

OBJECTIVE: A burgeoning literature has demonstrated that early adverse life events are associated with heightened vulnerability to a variety of adult medical illnesses. Similarly, previous studies indicate that adverse events during pregnancy may not only affect fetal development but may also be associated with vulnerability to adult illnesses for the offspring. It is unclear if maternal history of early adverse life events confers risk for negative birth outcomes that are associated with generational transmission of long term adverse outcomes in offspring. This study sought to examine the impact of early childhood trauma in mothers on birth outcomes in a clinical population devoid of many of the socioeconomic risk factors for adverse pregnancy outcomes.
METHOD: Women were enrolled prior to pregnancy or early in gestation in a prospective, observational study of the course of mental illness during pregnancy and the postpartum period. Each woman completed a Childhood Trauma Questionnaire (CTQ) at study entry and the Beck Depression Inventory (BDI) over the course of pregnancy. The CTQ subscale totals, including physical, sexual, and emotional abuse, in addition to physical and emotional neglect, were used as indices of childhood trauma severity. The severity of depressive symptoms during pregnancy was characterized using the area under the curve (AUC) for BDI scores collected across pregnancy. Obstetrical and neonatal data were obtained from the medical record. We analyzed the main and interactive effects of childhood trauma and maternal depression on birth outcomes in multivariate regression models controlling for covariates of non-interest.
RESULTS: A total of 839 women were included in the study. The group was homogeneous with 100% prenatal care. Maternal childhood physical abuse and sexual abuse in the presence of perinatal depression were associated with lower APGAR scores at 5 minutes (Wald X2 = 9.13, p = 0.003 and Wald X2 = 5.44, p = 0.02, respectively). While the severity of both maternal depression during pregnancy (β= 0.00165, p = 0.04) and maternal childhood physical abuse (β= -0.09452, p = 0.04) correlated with birth weight, there was not an interactive effect between these variables. Estimated gestational age was negatively correlated with maternal childhood trauma (physical abuse, Wald X2 = 4.89, p = 0.03 and emotional neglect, Wald X2 = 3.82, p = 0.05); but there was no interaction between maternal depression and childhood trauma.
CONCLUSION: A maternal history of childhood physical and sexual abuse in combination with perinatal depression resulted in lower APGAR 5 minute scores. Similarly, associations with changes in birth weight and gestational age at delivery in this population underscore the need to more carefully examine potential transgenerational effects of early adverse life events.

**NO. 187**

**A CASE STUDY EVALUATING THE IMPACT OF CHELATION THERAPY ON THE PROGRESSION OF DEMENTIA**

*Lead Author: Mahdi Razafsha, M.D.*
*Co-Author(s): Michael E. Armbruster, Jr., BSE, John G. Ryder, MS, Hura Behforuzi, MD, and Uma Suryadevara, MD*

**SUMMARY:**

Introduction: Chelating agents are medications capable of forming stable complexes with toxic metals and excreting them with minimal bio-transformation. Chelating agents are currently the preferred treatment for decorporation of toxic metals. In this case report we describe the acute worsening of cognitive decline in a patient who received chelating agents for the treat-

ment of heavy metal toxicity.
Case description: The patient is a 66 year old male with a history of dementia who presented involuntarily from a skilled nursing facility to our inpatient psychiatric facility due to escalating aggression toward several residents. The patient was declared medically clear. Non-contrast head CT imaging was negative for acute pathologic process, showing advanced chronological changes including mild ventricular enlargement, mild cortical atrophy, and age-appropriate ischemic demyelination. The patient had a history of working as an industrial welder in shipyards and nuclear power plants. Upon initiation of some difficulties with memory and comprehension, a hair toxicology study showed high amounts of aluminum, arsenic, and cadmium at approximately 95th percentile. Toxic metal levels were also detected for lead (80th percentile), and tin, titanium, nickel, and mercury (68th percentile). The patient then began a course of Ethylenediaminetetraacetic acid (EDTA) therapy for the treatment of heavy metal poisoning. Follow up urine toxic metals study supported significant increase in excretion of heavy metals. After completion of a course of EDTA treatments, the patient received 2,3-dimercapto-1-propanesulfonic acid (DMPS). Within two months of beginning DMPS the patient began showing markedly increased irritability, agitation, and paranoid thoughts, accompanied with rapid decline in his cognition and general functioning. These changes prompted discontinuation of chelation therapy.

Result: The major finding of this case report is the patient's rapid worsening of neurocognitive decline after receiving chelating agents. The speed of decline does not seem to be merely explained by the clinical course of dementia.

Discussion: We did not find any clinical trials assessing the use of chelating agents on cognition. One case report describes a middle aged female patient with neurocognitive deficits secondary to bismuth toxicity, who experienced rapid worsening of cognitive impairment after beginning DMPS. Clinical investigations are needed to further elucidate the safety and impact of chelating agents in the patients with dementia.

**NO. 188**

**IMPACT OF MENSTRUAL CYCLE PHASE ON PSYCHOSIS**

*Lead Author: Neelambika S. Revadigar, M.D.*
*Co-Author(s): Evaristo Akerele, M.D., MPH*
*Columbia University, Harlem Hospital*

**SUMMARY:**

Introduction:
The presentation of women to psychiatric clinics appears to increase during menstruation. The hormones could have a role in the severity with which of mental disorders present. Williams and Weeks (Williams EY et. al., 1952) reported cases of "menstrual psychosis"- psychosis with onset during or just before menstruation. Low serum estrogen level in "menstrual psychosis" may be related to the luteal phase of menstrual cycle (Lingjaerde P et al 1954). Here, we report the case of a young lady whose symptoms seemed to correlate with menstrual cycle phase.
Case Presentation:
A 22 y/o African American woman with schizophrenia and co-occurring cannabis use disorder was admitted to our Acute Care Mental Health Inpatient Unit. At the time of admission she had disorganized behavior, paranoid ideation and impulsive aggression. During three month hospitalization, she was repeatedly impulsive and violent requiring the use of IM medications and/or 4-limb restraints to control her behavior on several occasions. She failed serial trials of antipsychotics, she was switched to clozapine with partial response of her psychosis. During her hospitalization, we noted her psychotic symptoms and aggressive behavior were worse in the week preceding each menstruation. She required higher doses of antipsychotic medications to control her symptoms and was eventually transferred to long term hospital for further stabilization.
Discussion:
This case report supports prior studies that suggested fluctuations symptom severity in women with schizophrenia, with more severe symptoms occurring during low estrogen phase of the menstrual cycle. Estrogen hypothesis (Kendler KS et al. 2011) of schizophrenia suggests endogenous estrogen shields women from the worst effects of the illness and that progesterone has protective effects. Over-activity of dopamine pathways has been linked to schizophrenia symptoms. Dopamine receptors appear to exhibit increased sensitivity to estrogens/progestins during luteal phase. In primate studies, striatal D2 receptors showed 12% higher sensitivity during luteal as compared to follicular phase of menstrual cycle. fMRI studies in women suggest estrogen attenuates arousal pathways and modulates stress response (Gattaz et al.1994). This patient was treatment resistant requiring clozapine, which begs the question as to whether this kind premenstrual exacerbation of psychotic symptoms is seen only in treatment resistant women or treatment resistance is a result of premenstrual exacerbation of psychotic symptoms in a specific subset of women.
Conclusions:
The data suggest that estrogen protects women from debilitating effects of schizophrenia. Clinical management of patients with schizophrenia could be enhanced by close attention to premenstrual exacerbation of symptoms. Estrogen could serve as a useful adjunct for the treatment of women who present with premenstrual exacerbation of clinical symptoms and needs further clinical trials.

**NO. 190**

**PREDICTING MARKER OF CORTICAL ATROPHY FOR ATYPICAL ANTIPSYCHOTICS USE IN DEMENTIA PATIENTS**

*Lead Author: Yangho Roh, M.D.*
*Co-Author(s): Jong-taek Choi, M.D., Jiwon Kim, M.D., Sungil Woo, M.D., Ph.D., Sangwoo,Hahn, M.D., Ph.D., Jaeuk Hwang, M.D., Ph.D.*

**SUMMARY:**

Objectives: We aimed to identify the neuroimaging marker for prediction of the use of atypical antipsychotics (AAP) in dementia patients.
Methods: From April, 2010 to Mar, 2013, fifty patients who were diagnosed as dementia at psychiatric department of Soonchunhyang University Hospital, completed the brain magnetic resonance imaging scan and cognitive tests for dementia. Nineteen patients were treated with AAP for the improvement of behavioral and psychological symptoms of dementia (BPSD) and the other 31 patients were not. Areas of white matter

(WM), gray matter (GM), and cerebrospinal fluid (CSF) have been segmented and measured on brain T1 weighted images using Statistical Parametric Mapping 8. White matter hyperintensities (WMH) has also been segmented and measured on Fluid Attenuated Inversion Recovery (FLAIR) images using Gaussian mixture modeling. Multivariate logistic regression models were applied for assessment of association between AAP use and neuroimaging marker including GM/WM ratio, WMH/whole brain (GM+WM+CSF) ratio and WMH in prefrontal lobe.
Results: There was a significant association between AAP use and GM/WM ratio (odds ratio, OR = 1.11, 95% confidence interval, CI 1.02-1.22, p = 0.019), while there was no association between AAP use and other markers including WMH/whole brain ratio (OR = 1.11, 95% CI 0.59 - 2.11, p = 0.75) and WMH at prefrontal lobe (OR = 0.99, 95% CI 0.92 - 1.07, p = 0.84).
Conclusions: GM/WM ratio could be biological marker for the prediction of AAP use and BPSD in patients with dementia. This ratio was more likely to increase as dementia progress since atrophy of WM was more prominent than that of GM over aging.

**NO. 191**
**KETAMINE'S EXPANDING ROLE IN THE TREATMENT OF DEPRESSION**
*Lead Author: Wesley Ryan, M.D.*
*Co-Author(s): Ralph Koek, M.D., Cole Marta, M.D.*

**SUMMARY:**
In the mental health community, depression continues to be a common and disabling condition that can be a challenge to adequately treat. Inadequate and slow response, and lack of remission are common barriers to effective treatment. The current pharmacopoeia available to clinicians is primarily based on the serotonergic, noradrenergic, and dopaminergic systems, but these treatments are limited by slow response, typically on the order of several weeks. Recent studies with the N-methyl-D-aspartate receptor antagonist ketamine have show rapid and robust response, on the order of minutes, suggesting a developing role for the glutamate system in modulation of mood, especially in patients with a moderate or high suicide risk. Here we review the existing data, as well as recent developments, in this rapidly evolving treatment modality. While prior research has been focused primarily on intravenous methods of administration in controlled inpatient research settings, applicability to the broader psychiatric population is somewhat limited. New developments in intramuscular, sublingual, and oral methods of administration may expand this treatment to a broader population, bringing it to the outpatient treatment setting.

**NO. 192**
**TO SUFFER NO MORE: EXPLORING RATIONAL SUICIDE AMONGST GERIATRIC POPULATIONS IN THE NORTHWESTERN UNITED STATES**
*Lead Author: Robert Rymowicz, B.Sc.*

**SUMMARY:**
In the Northwestern United States, where suicide rates are amongst the highest in the country, the debate over the "right to die" has taken form with legislation designed to permit or make defensible acts of physician assisted suicide. In this context it must be understood that individuals in apparently rational states of mind choose, with due deliberation, to end their own lives for reasons deemed sufficient and worthy by medical professionals, politicians, and society at large.
While commonly used, the term suicide fails to distinguish between those acts committed by vulnerable individuals in moments of weakness and despair, and the levelheaded implementation of end of life plans by the legally competent. As a major public health concern, campaigns to discourage suicide and self-harm have in recent years received additional funding and attention, but interventions that fail to recognize the disparate motivations that drive people to end their own lives are doomed to be ineffective.
In the State of Oregon, where legal physician assisted suicides were first carried out in 1997 under the Death with Dignity Act, geriatric suicides may often be distinguished by key defining characteristics. Individuals aged sixty-five years and older are less likely to have a mental illness, or history of suicide attempts, and far more likely to have suffered physical health problems prior to taking their own lives. Around one hundred geriatric males and between ten and twenty geriatric females commit suicide every year in Oregon, compared to approximately twenty geriatric males and twenty geriatric females who choose physician assisted suicide.
With the intention of promoting a discussion as to what might and what should be done, this poster explores geriatric suicide in the Northwestern United States through subgroup analysis, and in contrasting it with physician assisted suicide, and with similar demographics in other parts of the country.

**NO. 193**
**COMBINED TOTAL SLEEP DEPRIVATION, SLEEP PHASE ADVANCE, AND BRIGHT LIGHT THERAPY IN SUICIDAL DEPRESSED INPATIENTS: AN OPEN-LABEL PILOT STUDY**
*Lead Author: Gregory Sahlem, M.D.*
*Co-Author(s): Benjamin Kalivas, M.D., Amanda Roper, M.D., Emily N. Williams, M.D., Nolan R. Williams, M.D., Jeffery Korte, Ph.D., Zachary D. Zuschlag, D.O., Salim El Sabbagh, M.D., Thomas W. Uhde, M.D., Mark S. George, M.D., E.Baron Short, M.D., MSCR.*

**SUMMARY:**
Introduction:
Previous studies have demonstrated that combined total sleep deprivation, sleep phase advance, and bright light therapy (Triple Chronotherapy) produce a rapid and sustained antidepressant effect in acutely depressed individuals. To date no studies have explored the impact of the intervention on depressed individuals with acute concurrent suicidality, limiting the utility of this intervention to a minority of depressed inpatients without suicidality.
Methods:
Participants were suicidal inpatients (N=3, Mean age=29, 2F) with unipolar depression. In addition to standard of care, they received open label Triple Chronotherapy. Participants underwent one night of total sleep deprivation (33-36 hours), followed by a three-night sleep phase advance along with four 30-minute sessions of bright light therapy (10,000 lux) each morning. Primary outcome measures included the 17 item Hamilton depression scale (HAM17), and the Columbia Suicide Severity Rating Scale (CSSRS), which were recorded at baseline prior to total sleep deprivation, and at the protocols comple-

tion on day five.

Results:
Both HAM17, and CSSRS scores were greatly reduced at the conclusion of the protocol. Ham17 scores dropped from a mean of 26.3 at baseline to a mean of 8.7 on day five (p=.03) with two of the three individuals meeting criteria for remission. CSSRS scores dropped from a mean of 23.7 at baseline to a mean of 7 on day five (p=.07).
Conclusion:
The interim results of this small pilot trial demonstrate that adjunct Triple Chronotherapy is feasible, and tolerable in acutely suicidal and depressed inpatients. Limitations include a small number of participants, an open label design, and the lack of a comparison group.
Support:
NIDA R25 DA020537-06 (PI's Back and Brady)

**NO. 194**
**VITAMIN D STATUS IN ADOLESCENTS AND ADULTS WITH EATING DISORDERS**
*Lead Author: Scott T. Schmidt, D.O.*
*Co-Author(s): Leslie Sim, PhD.*

**SUMMARY:**
Patients with eating disorders are at risk for significant psychological and medical complications of the illnesses. Due to the high risk for morbidity and mortality, evaluating and treating the wide range of medical complications in these patients is essential. Vitamin D deficiency is a potential health complication of eating disorders that poses a significant threat to the physical health of those individuals affected, including both skeletal and extraskeletal consequences. To date, research examining vitamin D status in patients with eating disorders has been limited to patients with anorexia nervosa (AN) and these findings have been mixed. However, patients with bulimia nervosa (BN) and eating disorder not otherwise specified (EDNOS) are also at risk for nutritional deficiencies and significant medical complications, yet it is unclear whether these patients are at risk for hypovitaminosis D. Given the lack of systematic information regarding vitamin D status in patients with BN and EDNOS, along with the high medical comorbidity in these patients, we aim to investigate the prevalence of vitamin D deficiency or insufficiency among patients with a diagnosis of BN and EDNOS. A retrospective cohort review was conducted on all adolescent (ages 13-17) and adult patients (18-35) with an established diagnosis of BN or EDNOS using Data Building and Query Builder (DBQB) tool. The DDQB tool is a search engine which allowed us to search the entire medical record of patients who met search parameters for specific tests that were performed and active medication list, diagnoses made during visits, and age, sex, and BMI during the same visit were recorded. In adolescents with BN (n=111), only 16% had their vitamin D level checked. Among adolescents with EDNOS (n=177), only 30% had a vitamin D level checked. Although between 11-29% were found to have hypovitaminosis D, only 0-6% had received treatment. In adults with BN (n=306), only 23% had vitamin D level checked. Among adults with EDNOS (n=394), 43% had 25-hydroxyvitamin D levels checked. For patients with BN and EDNOS only 6 and 5% received treatment with vitamin D, respectively. This is in spite of more than half having hypovitaminosis D (BN=51%, EDNOS=69%). The mean 25-hydroxyvitamin D level in adolescents with BN (30 ng/mL) and EDNOS (30 ng/mL) was similar to our previously-presented data in patients with AN. In adults, however, the mean 25-hydroxyvitamin D levels in patients with BN (29 ng/mL) and EDNOS (25 ng/mL) were significantly lower than previously presented data of adults patients with AN (36 ng/mL)--even when the negative relationship between obesity and 25-hydroxyvitamin D was controlled. The results of this study suggest that adolescents with BN and adult patients with BN and EDNOS are at risk for hypovitaminosis D. Moreover, the findings suggest that the current screening practice is insufficient and patients are undertreated for this medical condition.

**NO. 195**
**THE CORRELATION BETWEEN THE ADMINISTRATION OF INTRAMUSCULAR HALOPERIDOL AND PSYCHOSOCIAL THERAPY INTERVENTION ON AN ACUTE INPATIENT PSYCHIATRIC WARD**
*Lead Author: Yelena Semenova, B.A.*
*Co-Author(s): Davin Agustines, D.O.*

**SUMMARY:**
Agitated patients with mood disorders are a common occurrence in the psychiatric wards (Cornaggi, Beghi, Pavone, and Barale 2011). Agitated behaviors are often treated with administration of intramuscular haloperidol. In addition, the occurrence of patient agitation and acute intervention in forms of intramuscular medication is lowest on wards where patients are treated with a multimodal approach. This study examined the correlation between psychosocial therapy intervention and the administration of intramuscular haloperidol to patients with mood disorders at an acute inpatient psychiatric facility. This study retrospectively examined medication administration records of fifty patients with mood disorders over the span of two months before and after the reduction of psychosocial intervention. Twenty-five patients were randomly selected from each month and the total dosages of intramuscular haloperidol administered was recorded. The values from two months before and two months after the reduction were compared using a t-test. With the presence of psychosocial intervention, 4 individual doses of intramuscular haloperidol were administered during the 2 month study period. After the decrease in psychosocial rehabilitation services and intervention, the first month saw 12 individual doses of haloperidol, and the second month saw 16 individual doses of haloperidol administered due to patient agitation. The P value was 0.0377 and t value was 5.00. This emphasizes the need for continued psychosocial therapy on acute inpatient wards. Through psychosocial intervention patients gain an incentive to behave and develop effective coping strategies while building a sense of camaraderie and belonging on the ward.

**NO. 196**
**PALIPERIDONE AND ITS EFFECT ON THE SLEEP CYCLE AND ARCHITECTURE**
*Lead Author: Stephanie S. Shah, M.B.B.S., M.D.*

**SUMMARY:**
Objective:
Review of literature suggests improvement in the quality of sleep for patients on antipsychotic medication. Paliperidone

is an atypical antipsychotic available in oral and injectable form. There is data suggesting alteration in pattern of sleep for patients taking paliperidone. A literature review as well as a case study will be discussed with the goal of better understanding existing information on how paliperidone effects the sleep cycle and architecture.
Data Sources:
There was literature search conducted using medline/pubmed, Cochrane Library, PsycINFO, Web of Science, and CINAHL from October 1997 to October 2013. Search terms included antipsychotics, long acting antipsychotics, injectable antipsychotics, oral paliperidone, injectable paliperidone, sleep and sleep changes.
Study selection:
There were 894 citations. From the existing data, 4 articles matched the selection criteria which were the following:
-Patient was to be receiving paliperidone orally/intramuscularly for greater than two weeks.
-Article was required to involve human subjects only.
-Articles which discussed the use of paliperidone for agitation/delirium was not included.
-Article was required to discuss sleep in various sleep parameters such as total sleep time, sleep efficiency, sleep latency, REM sleep and subjective quality of sleep.
Data Extraction:
Data reviewed noted increased total sleep time, decreased sleep latency, decreased total number of awakenings, and overall improvement in the subjective quality of sleep.
Case Report:
The author reviews the case of a young adult male in his twenties diagnosed with paranoid schizophrenia who had been receiving injectable paliperidone. He was not known to have a sleep disorder prior to the initiation of treatment. He had body mass index within normal range. He was referred for a sleep study 4 months after treatment for complaints of daytime somnolence, snoring and acting out dreams. He was diagnosed with obstructive sleep apnea and was noted to have several abnormalities on sleep study including increased total REM sleep to 60% (normal percentage for healthy adults is 25%).
Conclusion:
Studies indicate increase in total sleep time, sleep efficiency, decreased total number of awakenings and subjective improvement in sleep. It is unclear if this is due to a decrease in the severity of psychotic symptoms or effects of the drug on the sleep cycle. Further studies would be helpful to better understand and quantify the nature of changes in the sleep cycle induced by paliperidone. Providers should consider careful clinical assessment of baseline sleep pattern in patients prior to the initiation of anitpsychotics as they are known to cause obstructive sleep apnea.

**NO. 197**
**ART MAKING IN PATIENTS WITH MENTAL ILLNESS**
*Lead Author: Barinder Singh, M.D.*

**SUMMARY:**
Background:
Art can be used to for facilitating emotional expression, increasing sense of control, promoting inner strength and sense of purpose and reducing stress and isolation. Art-making enhances self-worth and identity through providing opportunities to demonstrate continuity, challenge and achievement.

Methods:
Narrative research methods were used in this study to focus on changes in individual and their world view. Participants were patients with mental illness who used art as an adjunct in an art group or individually to cope with their mental illness. Data was collected through in-depth interviews conducted by the author. The goal of analysis was to create a synthesis of what the patients said and to create a meaningful representation of what they meant by what they said.

Results:
Analysis of narratives yielded three story lines: Getting a clearer view; Clearing the way emotionally and Art as a Haven. The story lines show existence being affirmed, confirmed and proclaimed through artistic expression and the experience of mental illness changing both the artist and her art.

Conclusion:
Art making is helpful as means of psychosocial support for patients with mental illness. It helps them deal with their illness in ways support groups and art therapy cannot. The therapeutic benefit of art making demonstrated in this study shows an avenue that can be used to enhance support services for patients with mental illness.

**NO. 198**
**RELATIONSHIP BETWEEN EMOTIONAL DISTRESS, HEALTH RELATED QUALITY OF LIFE, AND GENETIC POLYMORPHISM IN KOREAN HEMODIALYSIS PATIENTS**
*Lead Author: Jeong Hyun Sohn, M.D.*
*Co-Author(s): Jeong-Ho Seok M.D., Ph.D., Hyeong Cheon Park M.D., Ph.D., Won-Jung Choi M.D.*

**SUMMARY:**
Objectives: Emotional distress including anxiety and depression may have significant impact on quality of life (QoL) in hemodialysis patients. Genetic polymorphism also may be an important modulating factor in emotional distress and QoL in these patients. Serotonin 1A receptor polymorphism was known to be associated with vulnerability to emotional distress. The aim of the study was to investigate the relationship between emotional distress, health related quality of life, and genetic polymorphism in Korean hemodialysis patients.

Methods: Clinically stable patients from 6 hemodialysis centers were asked to participate in the study. Thirty-six-item Short-Form Health Survey (SF-36), Hospital Anxiety and Depression Scale (HADS) were used to assess health-related quality of life (QoL) and emotional distress, respectively. Sociodemographic factors such as age, sex, education and hemodialysis-related clinical factors (hemodialysis vintage and frequency, Kt/V), and laboratory parameters were assessed. Serotonin 1A receptor polymorphism was assessed. Regression analyses were conducted to find significant associations among these variables.

Results: Two hundred and sixty patients on hemodialysis were enrolled in this study. Mean age of the patient group was 54.7 ± 11.9 years old. Their mean anxiety and depressive symptoms scores were 5.5 ± 3.8 and 7.4 ± 3.9, respectively. The age,

depression symptom severity, and serotonin 1A receptor polymorphism were significantly associated with mental QoL but also with physical QoL in the final regression models. Anxiety symptom severity was only significantly associated with mental QoL. And comorbidity numbers, total hemodialysis duration were significantly associated with physical QoL in the final regression model.

Conclusion: After controlling multiple clinical variables, age, depressive symptoms, serotonin 1A receptor polymorphism were significantly associated with mental and physical QoL in hemodialysis patients. Chronic ongoing distress related to hemodialysis and genetic polymorphism may contribute to increase emotional distress and decreased QoL in this patient group. Clinicians should pay more attention to emotional distress of the hemodialysis patients to improve their health-related QoL.

Key words: end stage renal disease; hemodialysis; quality of life; emotional distress; serotonin 1A receptor polymorphism

**NO. 199**

**NEW ONSET PSYCHOSIS FOLLOWING ABRUPT DISCONTINUATION OF HORMONE REPLACEMENT THERAPY IN A TRANSWOMAN**

*Lead Author: Scott Summers, M.D., Ph.D.*
*Co-Author(s): John Onate, M.D.*

**SUMMARY:**

Estrogen and related hormones have a significant role to play in the etiology and likely the treatment of psychotic illness. Here we present the case of a 38 year old immigrant transwoman referred for management of first onset psychotic symptoms following abrupt discontinuation of female hormonal therapy first started in adolescence. The patient's symptoms progressed to catatonia, but were eventually treated with significant success by a combination of clozapine, estradiol and medroxyprogesterone. The case presented a fascinating look at the potentially protective role that estrogens may play in the delay or even potentially development of such symptoms. The presentation will review the underlying basic and clinical knowledge understood about how hormones affect psychiatric illnesses such as schizophrenia. It will also examine the complicated intersection of culture and transgender health.

**NO. 200**

**PSYCHOSOCIAL RESILIENCY EMPOWERMENT INTERVENTION FOR AFRICAN AMERICAN WOMEN WITH DEPRESSIVE SYMPTOMS IN PRIMARY CARE**

*Lead Author: Poonam K. Thandi, M.D.*
*Co-Author(s): Kisha B. Holden, Ph.D.*
*Deirdre Evans-Cosby, M.D.*

**SUMMARY:**

Abstract:
Background: Resiliency is the process of adapting well in the face of adversity and trauma. It involves behaviors, thoughts, and actions that can be learned and developed. Developing resilience can be affected by many things, such as culture. African American women are frequently confronted with several family, community, and unique societal stressors that may heighten their risk for developing depressive symptoms. Resiliency has an association with psychopathology and can be factored into the consideration of protective factors. Additional data is needed to improve implementation.
Design/Methods: This randomized controlled study is designed to determine the effects of a brief psychosocial resiliency empowerment intervention on perceived resiliency and selected psychosocial characteristics of African American women with depressive symptoms that attended a busy community primary care center. 190 women were screened for study inclusion using the PHQ-9; those with scores of at least 10 were eligible for study participation. Sixty five women were enrolled in the study and randomly assigned into control and intervention groups. Both groups were given a pre/post self-report assessment tools that covered several psychosocial and behavioral constructs of interest. The intervention group participated in a four session culturally-tailored gender-specific intervention that was co-facilitated by a faculty mentor and a psychiatry resident
Results: Descriptive statistics and comparisons of outcomes on selected demographic and psychosocial variables of interest (i.e., measures of depressive symptoms, negative and ruminative thinking, self-esteem, stress, resiliency, spirituality) among women in the intervention and control groups will be presented.
Conclusion: This study will add to the dearth of research about the role of resiliency and related psychosocial variables in empowering African American women to cope with depressive symptoms

**NO. 201**

**PHENOMENOLOGICAL DILEMMA: FORMAL THOUGHT DISORDER VERSUS APHASIA IN A YOUNG MARINE AFTER HEAD TRAUMA**

*Lead Author: Par Towb, M.D., Ph.D.*
*Co-Author(s): Cody Rall, M.D.David Williamson, M.D.*

**SUMMARY:**

We present a case in a which a young Marine developed a disorganization of speech after suffering brain injury in a motorcycle accident. The patient had structural damage to the left temporal lobe, derivative complex partial seizures, and a persisting psychotic disorder. Consideration of each of these diatheses as an explanation for the language abnormality led to a clash of nosologies, neurological vs. psychiatric. Fluent aphasia is one possible characterization, however, this deficit could have just as validly been classified using the nosology of Psychiatry as a formal thought disorder. The distinction is not academic; typically formal thought disorder is treated with antipsychotic medication while fluent aphasia is not. Our analysis of this patient's deficits suggest that the nosology of neurology (fluent aphasia) and that of psychiatry (formal thought disorder) may both satisfactorily classify the deficits seen in this patient, calling into question their distinction.

**NO. 203**

**A PILOT STUDY ON COMBINING NALTREXONE AND TOPIRAMATE FOR THE TREATMENT OF ALCOHOL DEPENDENCE**

*Lead Author: Elia M. Valladares, M.D.*
*Co-Author(s): Caridad Ponce, M.D., Xin Q. Wang, Nassima Ait-Daoud, M.D.*

**SUMMARY:**

Introduction/Hypotheses:
Topiramate and Naltrexone are two widely used agents in the treatment of alcohol dependence. These agents produce their clinical effects through different biochemical pathways; the former through modulation of dopamine release through GABA and glutamate actions, and the latter through opiate antagonism. Independent from each other, both have a small to moderate effect size. A combination of both drugs could potentially act synergistically, via contemporaneous modulation of the cortico-mesolimbic dopamine neurons, to suppress alcohol reinforcement. We conducted an inpatient pilot study to test the safety and potential efficacy of topiramate and naltrexone in combination for the treatment of alcoholism. Our overall hypotheses are that topiramate in combination with naltrexone will: 1) be a safe treatment for alcoholism with minimal adverse and cognitive effects, and 2) be more effective in reducing cue-induced and alcohol-induced craving when compared to placebo.
Methods:
14 alcohol-dependent non treatment seeking volunteers were screened. 7 subjects enrolled and 4 completed. Ages ranged from 22-39, with majority of White race, all single and male, with education level ≥12 years.
Subjects were admitted to inpatient unit for two 9-day periods, separated by 1 week washout phase. The trial was a double-blind placebo-controlled, within-subjects cross-over design.
All subjects received Topiramate 200mg + Naltrexone 50mg or placebo orally on a twice-daily regimen for 7 days. On days 7 & 8, subjects received alcohol and alcohol-related cues or corresponding control cues
Primary outcomes included: alcohol craving positive subjective effects and safety.
Safety was evaluated by closely monitoring the subjects and comprehensively evaluating drug emergent effects. Efficacy was evaluated by comparing the reduction rate of alcohol craving and consumption of alcohol while receiving treatment versus placebo.
Results:
The combination of the two drugs was well tolerated. The most common side effects included (data shown include the number of reports for the active medications versus placebo, respectively): attention impairment (17/4), confusion/memory impairment (18/4), dizziness (14/5), fatigue/somnolence (13/6), headache (7/8), paresthesia (18/6), taste abnormality (9/0) and weight loss (11/0). All the adverse events were mild and did not require medication adjustments.
Participants receiving topiramate and naltrexone had significantly less craving for alcohol as evidenced by results on the VAS scale: “crave a drink” (p=0.005) and “strong urge for a drink” (p=0.008).
Conclusions:
This is the first report evaluating topiramate and naltrexone for the treatment of alcohol dependence. This combination appears to be safe and effective in reducing alcohol craving and urge for a drink in our sample. Results need to be replicated on a larger scale that includes comparison to the effects of each medication individually.

**NO. 204**

**SENSORY PROCESSING DISORDERS AND DEVELOPMENTAL PSYCHOPATHOLOGY IN CHILDREN WITH EPILEPSY**

*Lead Author: Jolien S. van Campen, M.D.*
*Co-Author(s): Nienke J. Kleinrensink, Floor E. Jansen, M.D., Ph.D., Marian Joels, M.Sc., Ph.D., Kees P.J. Braun M.D., Ph.D., Hilgo Bruining, M.D., Ph.D.*

**SUMMARY:**

Background: Developmental psychopathology and childhood epilepsy often co-occur, suggesting a shared etiology. A candidate theory for this underlying mechanism is the imbalance between neuronal inhibition and excitation. The state of general neuronal hyper excitability might be clinically reflected by an altered sensitivity to sensory stimuli. To test this hypothesis, we investigated sensory processing profiles in children with epilepsy, and related these to severity of developmental psychopathology as well as epilepsy characteristics.

Methods: Parents or caregivers of 376 children with active epilepsy (aged 4-17 years) were sent validated questionnaires on sensory information processing (Sensory Profile), autism spectrum disorders (Social Responsiveness Scale) and attention deficit hyperactivity disorders (Strengths and Difficulties Questionnaire). Additionally, they were asked for information on epilepsy characteristics. Further information on epilepsy characteristics and clinical diagnoses was extracted from patient files.
Results: The prevalence of sensory processing disorders was increased in children with epilepsy compared to the validation cohort. Sensory processing problems were reflected by a low reported threshold for sensory stimulation, that negatively correlated to the severity of developmental psychopathology, as well as frequency of epileptic seizures and number of anti-epileptic drugs used. Interestingly, sensory processing problems were also present in children with epilepsy without symptoms of developmental psychopathology.
Conclusion: Our results indicate that sensory processing disorders in childhood epilepsy are reflected by a low threshold for sensory stimulation. This lowered threshold and its relation to severity of epilepsy and co-morbid developmental psychopathology, support the hypothesis that these often co-occurring disorders share a common pathophysiology, characterized by neuronal hyper excitability. Better insight into the underlying mechanisms that link developmental disorders and epilepsy may provide a basis for new treatment strategies.

**NO. 205**

**REPETITIVE AND COMPULSIVE BEHAVIORS IN A COHORT OF 63 SUBJECTS WITH DOWN SYNDROME**

*Lead Author: Samuel T. Wilkinson, M.D.*
*Co-Author(s): Elizabeth Atkins, George T. Capone, MD, Marco Gracos, MD, MPH, Cori Palermo, BS, Siddharth Srivastava, MD*

**SUMMARY:**

Background: Repetitive and compulsive behaviors (RCBs) are well documented but poorly understood in a number of genetic conditions, including Down syndrome. Individuals with Down syndrome have an additional copy of each gene on chromosome 21. Studying RCBs in Down syndrome subjects may yield insights into the genetic underpinnings of these behaviors.

Methods: Caregivers of 63 (46 adult and 17 pediatric) subjects

with Down syndrome completed the Children's Yale-Brown Obsessive Compulsive Scale for Pervasive Developmental Disorders (compulsive behaviors), the Aberrant Behavior Checklist (irritability, lethargy, hyperactivity, stereotypies and abnormal speech), and the Reiss Scales for Children's Dual Diagnosis (psychopathology). Two expert clinicians (GC and MG) reviewed all scales. A standard psychiatric history was also obtained from each subject.

Results: Compulsive behaviors were common in subjects, with the most frequent being repeating (70%), ordering (70%), miscellaneous (78%), rituals including others (38%), washing (38%), hoarding (36%), and checking (25%) behaviors. Notably, compulsion severity and hyperactivity were more strongly correlated among adults (coefficient 1.53, R-squared 0.30) when compared to children (coefficient = 0.71, R-squared = 0.05) after two outliers were removed. In children, compulsion severity and stereotypy were more strongly correlated (coefficient = 0.61, R-squared = 0.19) as compared to adults (coefficient = 0.15, R-squared = 0.012), though the correlation was not significant for either group.

Conclusions: There is a high prevalence of RCBs in Down syndrome individuals. In adults (but not children), hyperactivity is correlated with compulsion severity, suggesting that individuals with severe RCBs are also seen as more motorically active. Children, on the other hand, experienced higher RCB severity in association with more stereotypies. From a developmental perspective, the association in adults links RCBs with excitability/hyper-arousal, suggesting an impulsive-compulsive presentation, while the association in children links RCBs with repetitive movements, suggesting an association with neurodevelopmental deficits.

**NO. 206**

**PSYCHOSOCIAL FACTORS ASSOCIATED WITH CRACK COCAINE USE IN THE U.S. GENERAL POPULATION**

*Lead Author: Andriy Yur'yev, M.D., Ph.D.*
*Co-Author(s): Xavier Perez, M.D., M.P.H., Willy Philias, M.D., Evaristo Akerele, M.D., M.P.H.*

**SUMMARY:**

Introduction: Cocaine use disorder is a significant public health issue in the United States which requires investigation at multidimensional level. The primary source of information on prevalence of crack cocaine use and its psychosocial characteristics are qualitative studies. The data are often skewed since they come largely from individuals with a diagnosis of cocaine use disorders and those who present for treatment. In this study the relationship between psychosocial factors and crack cocaine use in U.S. general population was explored.
Methods: Data from the 29th General Social Survey (2012) which represents US general population used for this study. The database includes individuals who ordinarily would not be captured in most surveys. It includes a large group of treatment naive individuals. Questions reflecting to respondents' psychosocial background and crack cocaine use were reviewed. Chi-square analysis was used to assess relationship between crack cocaine use and psychosocial factors. Logistic regression was employed to explore complex association between crack cocaine use and selected psychosocial factors. The study met criteria for Institutional Review Board exemption by the Biomedical Research Alliance of New York (BRANY).
Results: In total, 1708 respondents were included in the study. Among all respondents 6% (N=103) reported lifetime history of crack cocaine use (8.1% among males and among 4.4% females). Univariate analysis revealed the following factors are related to crack cocaine use: marital status, happiness, satisfaction with family and financial situation, education level, health and history of crime conviction. Financial dissatisfaction, unhappiness and criminal history were still significantly associated with cocaine use in adjustment analysis.
Conclusions: Criminal history, financial dissatisfaction and unhappiness were among key factors associated with crack cocaine use. The study provides significant insights that could potentially improve identification, prevention and management of substance use disorders.

**NO. 207**

**MATERNAL PREPUBERTAL ADVERSITY PREDICTS GESTATIONAL AGE AT DELIVERY, INFANT BIRTHWEIGHT, AND INFANT HEAD CIRCUMFERENCE**

*Lead Author: Kathryn M. Zagrabbe, A.B.*
*Co-Author(s): Tracy L. Bale, Ph.D., C. Neill Epperson, M.D., Deborah R. Kim, M.D., Samuel Parry, M.D., Mary D. Sammel, Sc.D., Eileen Wang, M.D.*

**SUMMARY:**

Introduction: Prepubertal adversity can have lasting impact on the maternal hypothalamic-pituitary-adrenal (HPA) axis, which may subsequently influence the fetal HPA axis and birth outcomes. As part of a longitudinal study examining the effect of maternal HPA axis dysregulation on the fetal and infant HPA axis, we investigated the effects of maternal prepubertal adversity and prenatal psychosocial stress on gestational age at delivery, infant birthweight, and infant head circumference.
Methods: One hundred and fifty-five pregnant women 8-17 weeks gestation were recruited from University of Pennsylvania OB/GYN practices. Eligible participants were ≥ 18 years with no active psychiatric diagnosis, no serious medical illness, and no history of preterm birth. One hundred and three women were enrolled. Participants completed the Adverse Childhood Experience Questionnaire (ACE) and the Perceived Stress Scale (PSS). Their obstetric and infant records were examined for maternal and neonatal outcomes. Data regarding gestational age at delivery, infant birthweight, and infant head circumference are presented here. Univariable linear regressions were used to identify the roles of maternal prepubertal adversity and prenatal psychosocial stress in predicting gestational age at delivery, infant birthweight, and infant head circumference. Multivariable linear regressions were performed to account for maternal age, BMI, parity history, race, and pregnancy complications in predicting delivery outcomes. Maternal substance abuse was not included as the number of women who abused substances during pregnancy was too small.
Results: Of the 103 enrolled women, 61.2% had a prepubertal ACE score of 0, 21.4% had a prepubertal ACE score of 1, and 16.5% had a prepubertal ACE score of 2 or more. Prepubertal ACE score was positively correlated with PSS score ($r = .35$, $p < .001$). In univariable regression analyses, maternal prepubertal ACE score of 2 or more significantly predicted earlier gestational age at delivery ($p = .011$), lower infant birthweight

(p = .001), and smaller head circumference (p = .034). Greater prenatal psychosocial stress significantly predicted lower infant birthweight (p = .036), but not gestational age at delivery (p = .39) or infant head circumference (p = .36). In multivariable regression analyses, maternal prepubertal ACE score of 2 or more significantly predicted lower infant birthweight (p = .014) and smaller infant head circumference (p = .047), but not gestational age at delivery (p = 0.082). Greater prenatal psychosocial stress did not significantly predict gestational age at delivery, infant birthweight, or head circumference (all p's > .079).

Discussion: Maternal prepubertal adversity is a significant predictor of poorer delivery outcomes, even when accounting for multiple maternal variables. Maternal prepubertal adversity may even have a greater effect on delivery outcomes than prenatal psychosocial stress.

**NO. 208**

**THE ASSOCIATION BETWEEN CHRONOTYPE AND HAZARDOUS ALCOHOL DRINKING**

*Lead Author: Jeeyoung Lim, M.D.*

**SUMMARY:**

Objectives: The aim of this study is to investigate the direct relationships between circardian phase preference and alcohol use in young adult. We hypothesise that any observed association between eveningness and hazardous alcohol drinking is independent of coexisting psychiatric problem, sleep problem, and impulsivity.
Methods: A total of 197 medical students (age range: 18-24 years, female: 29%) participated in this study voluntarily. They were asked to fill out a booklet including demographic data, Beck Depression Inventory (BDI), State-Trait Anxiety Iventory (STAI), Barret's Impulsivity Scale. Hazardous alcohol use was assessed by Alcohol Use Disorders Identification Test (AUDIT) and M-E was assessed by Horne & Östberg Morningness Eveningness Questionnaire (MEQ). Higher MEQ score indicate morningness preference.
Results: Sixty-one(31%) were hazardous alcohol drinkers(HD). Impulsivity score was higher in HD than in normal control(NC) (3.24±2.84 vs 4.16±3.57, p=0.05). In NC, Morning type were 6.6%, Evening type 33.8%, whereas Morning type were 0%, Evening type 39.3% in HD(p=0.03). Multiple regression analysis revealed that MEQ was correlated with AUDIT after controlling for sex, BDI, STAI, impulsivity (β=-0.243, p<0.001)
Conclusion: Our findings demonstrate an association of hazardous alcohol drinking with eveningness. Our findings suggest that M-E may be correlated with alcohol use directly.

**NO. 209**

**CLOZAPINE CASE REPORT**

*Lead Author: Beenish A Syed, M.D.*
*Co-Author(s): Aqeel Hashmi, M.D.*

**SUMMARY:**

Background: Patients with Schizophrenia are more likely to be convicted of a criminal offense and found incompetent to stand trial. Incompetent defendants are often represented by patients with treatment-resistant schizophrenia which is defined by persistence of psychotic symptoms despite treatment with traditional or novel antipsychotics. Incompetent defendants are typically committed to competency restoration programs wheresuccessful restoration is related to response to psychotropic medication. Clozapine is the primary pharmacological therapy for treatment resistant schizophrenia. We report a defendant with Treatment Resistant Schizophrenia who was prescribed Clozapine and restored to competency within a short duration; and during a subsequent prolonged hospitalization with management with other antipsychotics was found "incompetent to stand trial and unlikely to be restored". To the authors' knowledge, the management of treatment resistant schizophrenia with clozapine in the context of competency restoration has not been studied.
Case Report: Mr. M is a 49 year old male with schizophrenia who was committed to the competency restoration unit after having been opined as incompetent to stand trial for a State Jail Felony Charge. The defendant exhibited disorganized speech and thought process, andauditory hallucinations and he verbalized a constellation ofgrandiose delusions. BPRS (Brief Psychiatric Rating Scale) score on admission to hospital was 56. Review of his treatment history revealed that he suffered from a treatment resistant psychotic illness and he was prescribed clozapine 75mg in the morning and 175mg at night. He showed remarkable improvement and significant reduction of psychotic symptoms within three weeks. He was opined as Competent to Stand Trial; the duration of hospitalization was 28 days and BPRS score at the time of discharge was 24. Approximately 15 months later the defendant presented to the competency restoration unitsubsequent to a misdemeanor charge. His presentationwas similar to his previous admission. BPRS score on admission to hospital was 48. He refused to try Clozapine and he would not comply with blood tests. He was initiallyprescribed Haloperidol 20 mg daily without adequate response. About seven weeks later Olanzapine 20 mg daily was prescribed, with subsequent reduction in bizarre behaviors. However he continued to show evidence ofresidual delusions. He was opined as "Incompetent to stand trial and unlikely to be restored". The duration of hospitalization was 92 days and BPRS score on discharge was 34.

Discussion: We recommend use of pharmacological guidelines for treatment resistant schizophrenia in competency restoration programs; and consideration of such guidelines when competency evaluators give opinions of the likelihood of restorability. The authors discuss the benefits of clozapine therapy in competency restoration and the probable underutilization of this treatment option in these settings.

**MEDICAL STUDENT-RESIDENT COMPETITION POSTER SESSION 2**

**NO. 1**

**PSYCHOPHARMACOLOGY ALGORITHM FOR THE MANAGEMENT OF GENERALIZED ANXIETY DISORDER**

*Lead Author: Harmony R. Abejuela, M.D.*
*Co-Author(s): David N. Osser, M.D.*

**SUMMARY:**

Background: This is a 2014 revision of previous algorithms for the psychopharmacology of generalized anxiety disorder (GAD) under the auspices of the Psychopharmacology Algorithm Project at the Harvard South Shore Program, which has recently

published six algorithms for other psychiatric disorders. It differs from previous versions of GAD algorithms in proposing alternatives to the usual SSRIs and SNRIs in the event of inadequate response or unacceptable side effects.

Methods: Previous algorithms from 1999 and 2010 and associated references were evaluated. Studies and reviews published from 2008-2013 were obtained from PubMed and reviewed with a focus on their potential to justify changes in the recommendations of previous algorithms. Exceptions to the main algorithm for special patient populations, such as women of childbearing potential and pregnant women, adolescents, the elderly, and those with common medical and psychiatric comorbidities were considered. Efficacy and tolerability in both acute and maintenance management were the basis for prioritizing treatments. If efficacy, tolerability, and safety were comparable, then costs were considered.

Results: SSRIs titrated to their therapeutic doses is still the basic first-line medication for GAD. If response is satisfactory, then maintenance for 12 months is recommended. If response is inadequate, then the second recommendation is to try a different SSRI. An alternative would be a benzodiazepine for selected patients. Bupropion is a possibility based on one small randomized clinical trial. Gabapentin may be considered (despite minimal evidence and the absence of efficacy evaluations) as it is very similar to pregabalin, which has undergone many clinical trials and has been approved in Europe for GAD, though it is not FDA-approved in the United States for this indication. However, despite their similarities, gabapentin is not a scheduled drug, has a more favorable safety profile, and is more affordable than pregabalin. If there is an unsatisfactory response to the second SSRI, then the recommendation is to try an SNRI. For patients with a validated partial response after an SSRI trial, then the recommendation is to consider adding a medication that might augment the SSRI. For this purpose, a benzodiazepine is recommended, although consideration may also be given to gabapentin. Buspirone is an alternative augmenter. Other alternatives to SSRIs and SNRIs that may be considered include hydroxyzine, quetiapine or mirtazapine if weight gain is not concerning, and a benzodiazepine if there is no history of a substance use disorder. Treatment-resistant patients may be tried on newer alternative approaches like kava or agomelatine, the latter not available in the United States.

Conclusion: This revision of the GAD algorithm responds to issues raised by new treatments under development such as pregabalin and organizes the evidence systematically for practical clinical application.

**NO. 2**

**NEUROSYPHILIS NOT A BYGONE DISEASE: A CASE OF CEREBRAL GUMMA PRESENTING AS PSYCHOSIS**

*Lead Author: Joshua R. Ackerman, M.A., M.D.*
*Co-Author(s): Norma Dunn M.D., Ronnie Swift M.D.*

**SUMMARY:**

Neurosyphilis can occur at any time after initial infection by Treponema Pallidum. Antibiotic treatment drove cerebral syphilitic gumma into obscurity since treatment is usually instituted before the development of nervous system manifestations. Gummas have presenting symptoms similar to brain tumors and other space occupying lesions. The diagnosis of tertiary syphilis is made based on neurological symptoms, radiological findings, and immunological testing. We report a patient with a history of psychosis who developed an acute change in mental status and was diagnosed with cerebral glioma.
Case Report:Mr. G. is a 55 year old male, diagnosed with Psychosis Not Otherwise Specified and remote history of psychoactive substance abuse. A review of his medical records indicated negative RPR and positive TPPA. His psychosocial history is significant for a career as an amateur boxer and history of unprotected sex. Mr. G. reported intermittent auditory hallucinations and paranoid delusions resulting in multiple psychiatric hospitalizations.
While traveling 3 years ago, he developed acute left sided visual loss associated with headache and dizziness. He was transported to a hospital with altered mental status. CT scan of the brain showed an enlarged pituitary gland. MRI revealed an enhancing suprasellar mass, most likely a hypothalamic glioma. The mass compressed sections of the optic chiasm leading to unilateral vision loss. A medical workup followed. The patient was HIV negative. Laboratory findings (CBC, BMP, LFT) were unremarkable.
A right craniotomy was performed. Biopsy from the surgery showed prominent granulomas with fibroid necrosis and neutrophils. Gram stain and polarization microscopy showed no organisms. CSF analysis was positive for syphilis antibody. These findings do not support a diagnosis of glioma.
The patient was treated with penicillin for six weeks with gradual improvement of his vision. He reported less paranoid symptoms, is treated with a lower dose of antipsychotic medication, and is living in a shelter rather than on the street.
Discussion:Mr. G's neuropsychiatric symptoms, history of boxing, exposure to syphilis as evidenced by chronically positive serum TPPA, and radiological findings of a suprasellar tumor made the differential diagnosis complex. Dementia pugilistica can occur in boxers and is characterized by emotional lability and behavioral changes. Positive CSF and VDRL are both highly sensitive for neurosyphilis.
Conclusion:The pathology of the tumor, the return of vision, and the decreased paranoid thinking following treatment with penicillin strongly suggest the diagnosis of neurosyphilis. This case highlights the difficulty in diagnosing neurosyphilis. Clinicians should consider this as a pertinent differential diagnosis in patients with neuropsychiatric symptoms. Our goal as clinicians should be the early detection and treatment of syphilis to prevent involvement of the central nervous system.

**NO. 3**

**A CASE OF DICLOFENAC-INDUCED PSYCHOSIS**

*Lead Author: Crispa Aeschbach Jachmann, M.D.*
*Co-Author(s): Teresa Pigott, M.D.*

**SUMMARY:**

Background: Non-steroidal anti-inflammatory agents (NSAIDs) have been associated with a wide range of psychiatric side effects including psychosis (auditory and visual hallucinations, paranoia, delusions, and depersonalization), mood changes, and cognitive impairment. These effects tend to begin shortly after the initiation of the NSAID and rapidly clear upon its cessation. While psychiatric side effects are generally considered

rare, certain patients including those with previous psychiatric illness and the elderly may be at an increased risk. The mechanism remains poorly understood but has been linked to the effect of NSAIDs in decreasing substance P (SP) thereby resulting in an increase in monoamine levels and neurotransmitter disinhibition. Diclofenac is a COX-2 inhibitor NSAID.
Case Report: Mrs. A was a 47 year old Hispanic female admitted to an acute psychiatric unit for acute psychosis with agitation, hyper-religiosity, prominent delusional thoughts, command hallucinations, thought blocking, and disorganized thought process which had abruptly emerged over the preceding 2-3 weeks. Her psychiatric history was significant for a previous episode of Major Depression with Psychotic Features that had occurred 18 months prior. At that time, she had been hospitalized and treated successfully with Citalopram 40 mg/day and Risperidone 4 mg/day for 3-4 months. She discontinued the medication herself without any recurrence of symptoms for the next 15 months. She had recently been prescribed Diclofenac 75 mg po BID by her PCP for pain from a "bunion." Her psychotic symptoms emerged within 7-10 days of starting the Diclofenac and persisted despite stopping the Diclofenac 7 days prior to being psychiatrically hospitalized. There were no mood symptoms preceding her psychosis and she remained euthymic. Her routine labs were unremarkable and physical exam was normal. Risperidone 4 mg/day was started. After 7 days, her psychosis had resolved and she was discharged.
Discussion: Mrs. A's psychosis was considered most likely Diclofenac –induced. While she had a history of psychosis, it is important to note that it had previously occurred solely in the context of a pre-existing depressive episode. In addition, Diclofenac is metabolized via the P450 CYP2C9 isoenzme and variations in CYP2C9 genotypes appear to be particularly common in the Hispanic population, so it is possible that this may also have been a factor in increasing her vulnerability to adverse effects.
Conclusion: The high frequency of NSAID use, both prescribed and over-the-counter, increases the importance of identifying potential psychiatric side effects that may arise. Hence, psychiatrists should be aware of this danger in susceptible patients. All patients who develop acute psychiatric symptoms should be screened for the use of NSAIDs and, if the screen is positive, they should be counseled to consider alternative treatment as well as to whether psychotropic medication is indicated.

**NO. 4**

**CASE REPORT ON CAPGRAS SYNDROME**

*Lead Author: Fariha Afzal, M.D.*
*Co-Author(s): Najma Hamdani, M.D., Gloria Martz, D.O., Clayton Morris, M.D.*

**SUMMARY:**

The case of a 24 year old Caucasian male, who has been admitted in a state psychiatric facility and exhibits features of Capgras Syndrome, a delusion of misidentification, is presented. It can occur in the context of not only psychiatric, but also medical disorders, including dementia, epilepsy, vitamin B12 deficiency, diabetes, hepatic encephalopathy, and other CNS lesions. This case study addresses the etiology, presentation, diagnostic criteria, treatment, and prognosis of Capgras Syndrome in schizophrenic population. Patient displays paranoia, derealization, and recurrent delusions about his mother being replaced by an imposter. We conclude that management of patients with a diagnosis of Schizophrenia displaying the symptoms of Capgras Syndrome does not differ from patients with Schizophrenia.

**NO. 5**

**EPIDEMIC OF KORO IN NORTH EAST INDIA: AN OBSERVATIONAL CROSS-SECTIONAL STUDY AND LITERATURE REVIEW**

*Lead Author: Vishesh Agarwal, M.D.*
*Co-Author(s): Rajesh Kumar, M.D., Hemendra R. Phookun, M.D.*

**SUMMARY:**

Background: Koro is a culture bound syndrome, endemic to South-East Asia and known to present as an epidemic. It is an unshakable belief of retraction of one's genitalia into the abdomen accompanied with fear of death. The first epidemic in India was seen in 1968 in the state of West Bengal.
Objective: An observational cross-sectional study conducted in 2010 over the course of a week, correlating socio-cultural and demographic variables of 70 patients who presented with this syndrome in the north eastern state of Assam, India.
Method: Data collected in an organized format from 70 cases seen in emergency department and outpatient clinic who met the diagnostic criteria for Koro based on DSM IV. Published literature on Koro was reviewed.
Results: Of the 70 patients included in study, 97.1% (n=68) were males, 60% married (n=42), and 62.9% (n=44) from lower socio-economic status. 68.6% (n=48) presented to the emergency department and 85.7% (n=60) reported attack at home with more people reporting it in the evening or night 62.9% (n=44). The most common presenting symptoms were tingling sensation in thighs, shortening of the penis and severe anxiety with fear of death. Patients were referred for psychotherapy and most showed good response to supportive and insight oriented psychotherapy.
Conclusions: Koro commonly presents in an epidemic form as an acute anxiety state. Although reasons remain unclear, some accounts relate this to the wide media coverage and news reports. It appears to have a good prognosis and patients respond well to psychotherapy.
Key words: Koro, culture bound syndromes, acute anxiety, and psychotherapy.

**NO. 6**

**THE IMPACT OF CANNABIS ON THE FUNCTIONING OF COLLEGE YOUTH WITH PSYCHIATRIC DISORDERS**

*Lead Author: Meesha Ahuja, M.D.*
*Co-Author(s): Laura Whiteley M.D, Hannah Fegley, L.C.S.W., Larry Brown M.D.*

**SUMMARY:**

Introduction: Major psychiatric and substance use disorders most commonly begin, and are most prevalent, in young adulthood, and the number of college students seeking psychiatric care continues to rise. The concomitant abuse of substances has been linked to poorer clinical outcomes for young adults with psychiatric disorders such as increased hospitalizations, increased symptomatology, and poorer treatment adherence. Cannabis, in particular, is widely used on college campuses and many locales are decriminalizing its use, which suggests that its use may become even greater. Unfortunately, there is no

research that examines the effect of cannabis on the scholastic and general functioning of college students in psychiatric care, which this study aimed to do.

Setting: The College Mental Health Program at Rhode Island Hospital receives psychiatric outpatient referrals from eight colleges in Rhode Island.

Methods: The charts of 113 patients seen in the past two years by one psychiatrist in the College Mental Health Program were reviewed by a second psychiatrist and ambiguities clarified with the treating psychiatrist. Information obtained included demographic variables, psychiatric diagnoses including substance abuse and/or dependence diagnoses, student standing (medical leave vs. active student) and GAF scores. Associations between variables were determined using t-tests and chi-square tests.

Results: 34% of the 113 youth (mean age 21, 67% female) in psychiatric care in the College Mental Health Clinic had comorbid substance abuse or dependence. 24% out of the 113 youth specifically had comorbid cannabis abuse or dependence. Those diagnosed with a cannabis disorder were more likely to be on medical leave from their school (46% vs. 13%, X2=11.89, p=.001), to have an overall lower functioning as measured by their GAF score (55.5 vs. 66.4, t=6.16, p<.001, Cohen's d effect size of 1.4) and to be diagnosed with a Bipolar disorder (47% vs. 19%, X2=5.63, p< .05) than those without a cannabis disorder. Those with Anxiety or Depressive disorders were less likely than those without to have a cannabis disorder (12% vs. 29%, X2=4.3, p<.05; 18% vs. 37%, X2=4.47, p<.05, respectively).

Implications: Cannabis is commonly used in college and these finding suggest that its abuse or dependence by those in psychiatric treatment is associated with greater functional impairment and greater likelihood of being on medical leave. Nearly half of those with Bipolar disorder had a cannabis disorder, suggesting the need for careful screening and prompt treatment. The high rate of cannabis use disorders among college students in psychiatric care warrants combined treatment approaches and should be widely available on or near campus.

**NO. 7**

**ONLINE DIALECTICAL BEHAVIOR THERAPY (DBT): EFFECTIVE IN IMPROVING SYMPTOMS IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER**

*Lead Author: Nazanin Alavi, M.D.*
*Co-Author(s): Karen, Gagnon, R.N, Margo, Rivera, Ph.D*

**SUMMARY:**

Introduction: Borderline personality disorder (BPD) is a serious psychiatric disorder which is characterized by a pervasive pattern of instability in affect regulation, impulse control, interpersonal relationships, and self-image. Clinical signs of the disorder include emotional dysregulation, impulsive aggression, repeated self-injury, and chronic suicidal tendencies.
Dialectical Behavior Therapy (DBT) is a form of clinical behavior analysis used to treat people with borderline personality disorder and has been proven effective in a number of controlled research studies, especially in reducing suicidal and self-injurious behaviors, and the frequency of acute hospitalizations. Many patients suffering from the symptoms of borderline personality disorder are resistant to taking part in group psychotherapy, a core aspect of DBT.
With Internet use ever rising, offering the skills-building aspect of DBT online can provide an alternative treatment.
Method: The Personality Disorders Service at Queen's university provides specialized care to individuals suffering from personality disorders. Managing Powerful Emotions Group is a psycho-educational group offered for individuals who have difficulty with emotion regulation.
Participants applying for treatment were offered the opportunity to choose between the online format or live sessions of the Managing Powerful Emotions Group. In each of the 15 sessions of both the live and online groups, patients were provided with information about distress tolerance or emotion regulation skills (power-point format), homework assignments, templates for completing homework, and feedback regarding the previous week's homework from the group therapist. Participants were assessed by using a self-assessment questionnaire and Difficulties in Emotion Regulation Scale (DERS) to measure six subscales of emotion regulation including nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity.
Results: The DERS scores among live and online groups were not significantly different before treatment. Statistical analysis showed that both online and live DBT significantly reduced DERS scores in all six categories, there was significant change in functioning and level of symptomatology in both groups after 15 weeks of treatment, and there was no significant differences in the changes in the scores in the live and online groups.
Conclusion: Despite the proven efficacy of psychotherapy, there are some barriers, including resistance to participating in live sessions, long wait-lists, and transportation challenges. With Internet use rising everyday, delivering online psychotherapy might provide alternative treatment. This is the first study that has examined online DBT in the treatment of borderline personality disorder.

**NO. 8**

**THE GRAYING OF ACADEMIC PSYCHIATRY: FACULTY AGE TRENDS, 1967-2012**

*Lead Author: Brittany B. Albright, M.D., M.P.H.*
*Co-Author(s): Erica Elwell, B.A., Christine Q. Liu, Ph.D., and William F. Rayburn, M.D., M.B.A.*

**SUMMARY:**

Introduction: Psychiatry is approaching a workforce crisis having the third oldest workforce out of 36 subspecialties with 56.7% of adult psychiatrists being age 55 years or older according to the Association of American Medical College's (AAMC) 2012 Physician Specialty Data. The American Psychiatric Association (2012) predicts that by 2015, there will be a shortage of about 2,900 geriatric and 22,000 child psychiatrists. The AAMC has shown an increase in the ages of full-time faculty in clinical and basic science departments over the past 45 years. The number of faculty in psychiatry has increased over the this time period with faculty retention rates remaining high. The potential exists for a large proportion of academic psychiatrists being older than in the past and nearing retirement age. This

investigation determines trends in the mean ages of psychiatry faculty over the past 45 years and how they compare with other clinical departments.
Methods: This descriptive study used the Association of American Medical Colleges (AAMC) Faculty Roster. The findings reflect the mean ages of full-time psychiatry faculty (MD; DO; MD PhD) as of December 31 between 1967 and 2012. Ages for this entire population were examined annually and at 15-year intervals.
Results: During this 45-year period, the total number of full-time psychiatry faculty increased nearly fivefold from 1,027 in to 5,461 individuals. The average faculty age was 41.9 in 1967, 44.6 in 1982, 47.4 in 1997, and 51.2 in 2012. The percentages of faculty over 55 years old were 7.7 percent in 1967, 19.1 percent in 1982, 22.2 percent in 1997, and 39.0 in 2012. Over this same period, the average age of entry level first-time assistant professors increased from 36.4 to 40.4 years old. The average age for men increased from 41.8 years old in 1967 to 53.2 years old in 2012, and for women whose age increased slightly from 43.5 years old in 1967 to 47.9 years old in 2012. The average age of white faculty members increased from 42.0 years old in 1967 to 53.1 years old in 2012, while those faculty underrepresented in medicine increased from 40.4 years old to 48.9 years old. Male and female faculty remained consistently older in psychiatry than those in other clinical departments combined.
Discussion/Conclusion: The average age of psychiatry faculty increased steadily, regardless of rank or demographic characteristics. The younger average ages of women and minorities likely reflect their more recent arrival to the faculty in appreciable numbers. These findings, along with the comparison of aging with other clinical departments, are important for policy issues pertaining to the financing, recruitment, and development of faculty.

**NO. 9**

**CLINICAL AND IMMUNOLOGICAL HETEROGENEITY OF LIMBIC ENCEPHALITIS: A CASE SERIES OF ELEVEN PATIENTS AND REVIEW OF THE LITERATURE**

*Lead Author: Deepti Anbarasan, M.D.*
*Co-Author(s): Deana M. Gazzola, M.D., Jonathan E. Howard, M.D.*

**SUMMARY:**

Limbic encephalitis (LE) is a neuropsychiatric syndrome that often presents with a combination of rapidly progressive psychiatric symptoms including psychosis, confusion, mood dysregulation, and short-term memory deficits. Associated neurological symptoms such as dyskinesias, autonomic dysfunction, and seizures can also occur. LE, which is associated with antibodies to both intracellular and extracellular (neuronal cell membrane) antigens, has become better recognized in recent years due to increased diagnostic capabilities, and a greater awareness and understanding of the clinical and immunological heterogeneity of the disease.
Here we present a case series of eleven patients with prominent psychiatric symptoms and either confirmed or probable diagnosis of LE based on serologic and cerebrospinal fluid results, electrophysiological data, and radiological findings. Of the eleven patients, four were diagnosed with anti-voltage gated potassium channel complex-associated antibody mediated (anti-VGKCC) encephalitis, and three were diagnosed with anti-N-methyl-d-aspartate receptor (anti-NMDAR) encephalitis. We review the clinical characteristics on presentation, specific imaging and laboratory findings, and therapeutic interventions for each case; a brief discussion on LE prognosis is also provided. Highlighted are key clinical features that should alert physicians to the possibility of an underlying LE. In particular, the presence of select clinical manifestations can help to differentiate some of the antibody-mediated entities that comprise the LE spectrum. This is illustrated by comparing the clinical findings of those patients diagnosed with anti-VGKCC encephalitis to those diagnosed with anti-NMDAR encephalitis in our case series.
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**NO. 10**

**THE LINE BETWEEN DELUSION OF PREGNANCY AND PSEUDOCYESIS: A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Md. Ashik Ansar, M.D., Ph.D.*
*Co-Author(s): Arpita G. Banergee, M.D., Guillermo Otero-Perez,M.D., Carolina Retamero, M.D.*

**SUMMARY:**

Background: Pseudocyesis is a historical diagnosis, defined as a false belief of being pregnant that is associated with objective signs and reported symptoms of pregnancy which may include labor pains at the expected date of delivery. Delusion of pregnancy refers to the false belief of being pregnant in absence of physical sings suggestive of pregnancy that may be experienced by a psychotic person and according to DSM-5, it is classified within the Schizophrenia Spectrum and Other Psychotic Disorders. Here we report a challenging case a 42 year old Asian nulliparous woman who presented at 41 weeks of amenorrhea with enlarged abdomen in the setting of bizarre somatic delusions and auditory hallucinations. Case report: A 42 year old female presented to the Emergency Room complaining of 41 weeks of amenorrhea, progressive abdominal enlargement, mildly enlarged breasts, 30 pounds weight gain, and sensation of fetal movement. She believed her water broke and that her baby was going to come soon. Initial evaluation revealed a firm and enlarged abdomen (approximately 26 weeks gestational size), non-tender with no palpable uterine outline. Pregnancy test and other workup including urine drug screen (UDS) were negative. Bedside abdominal ultrasound confirmed normal sized ovaries with questionable enlargement of uterus in absence of intrauterine product or adnexal mass. Pelvic examination was unremarkable. She continued to believe she was pregnant despite proof of the contrary and reported she hears the baby's heart sound regularly with a doppler ultrasound she purchased 3 months before presentation. She asked to be dis-

charged to go to another hospital to get "induced". Methods: A review of the literature and PubMed search was conducted using key words: 'pseudo-pregnancy', 'phantom pregnancy', 'simulated pregnancy', 'delusion of pregnancy', and 'psychotic delusion of pregnancy'. Objectives: 1) To review current consensus differentiating pseudocyesis from delusion of pregnancy and the standard treatment approach. 2) To recognize the obstacles and challenges in managing such cases and to discuss psychodynamic perspectives. Discussion:Pseudocyesis demonstrates the ability of the psyche to dominate the soma, probably via central input at the level of hypothalamus. Therefore its clinical presentation may vary on a case by case basis. It is important to distinguish pseudocyesis from closely related phenomena such as delusion of pregnancy which can be largely explained in the context of psychotic illness. According to the current consensus, psychotherapy is the main stay of treatment for the former diagnosis in contrast to the treatment of psychotic delusion of pregnancy which often renders antipsychotic. In our case, a rare combination of signs and symptoms of pseudocyesis and psychotic delusion of pregnancy were observed and hence the distinctive line between the two conditions was faint. Ref: *Kaplan and Sadock's. Synopsis of Psychiatry 9th ed, p871.*DSM5

**NO. 11**

**COMPLICATED GRIEF TRAJECTORIES IN SPOUSES BEREAVED BY SUDDEN DEATH**

*Lead Author: Elie Aoun, M.D.*
*Co-Author(s): Giovanna, Porta MS.David, A, Brent MD.Nadine, M, Melhem PhD.*

**SUMMARY:**

Objective. Complicated grief (CG), characterized by a persistent heightened intensity of grief symptoms associated with functional and social impairment is experienced by 10% of bereaved adults. This study examines the longitudinal course of CG in adults bereaved by sudden death (suicide, accident, natural) and the early predictors of a prolonged CG reaction and seeking mental health services.
Method. 138 subjects were followed up at an average of 7, 21, 33 and 62 months following bereavement with a detailed assessment of grief reactions using the Inventory for Complicated Grief (ICG), psychiatric disorders before and following bereavement using the Structured Clinical Interview for DSM-IV, functional impairment using the Global Assessment Scale (GAS), circumstances of exposure to death, self-reported symptomatology, physical health, and psychosocial characteristics. The majority (83%) of subjects were spouses of the deceased.
Results. We used Latent Class Growth Analysis (LCGA), which identified three distinct longitudinal grief trajectories: 54% had initial grief reactions in the 28th percentile (baseline mean ICG of 10.5, SD = 6.3) that significantly decreased over time, 33% showed grief initial scores in the 70th percentile (baseline mean ICG of 25.0, SD = 9.0) that started to decrease two years following bereavement, and 13% had high ICG scores in the 93rd percentile (baseline mean ICG of 43.2, SD = 11.0) that persisted over time consistent with CG. Multinomial logistic regression was conducted to examine the baseline predictors (7 months following bereavement) of the three longitudinal trajectories and resulted in the following predictors: new-onset PTSD diagnosis, self-reported depression symptomatology, functional impairment, low self-esteem, and blaming self and others for the death. Type of death and relationship to the deceased were not significantly associated with grief trajectories. The longitudinal trajectories were also significantly associated with early access to mental health services (put statistics here). Using cox regression analysis, we found history of bipolar disorder and baseline GAS scores to be significant predictors of time to onset of mental health services.
Conclusion. Grief reactions subside over time for more than half of adults bereaved by sudden death; however, a subset shows complicated grief reactions. We described the longitudinal course of grief and identified early predictors of a prolonged CG reaction and seeking mental health services. These results help clinicians in identifying individuals at risk early on following bereavement, and thus in need for treatment and preventative approaches.

**NO. 12**

**ELECTROCONVULSIVE THERAPY FOR TREATMENT-RESISTANT PSYCHOSIS IN VELOCARDIOFACIAL SYNDROME**

*Lead Author: Carolyn E. Auffenberg, M.D.*
*Co-Author(s): John Csernansky, M.D., Lisa Rosenthal, M.D.*

**SUMMARY:**

Velo-cardio-facial syndrome (VCFS) is a genetic disorder that encompasses DiGeorge Syndrome, 22q11 deletion syndrome, and conotruncal anomaly face syndrome. VCFS results from a microdeletion of chromosome 22q11.2, with a prevalence of one in every two thousand live births. Despite the common microdeletion, VCFS has a broad phenotype, with more than one hundred eighty diverse clinical features thought to derive from a common defect in neural crest cell migration. In addition to several serious medical conditions observed in VCFS, up to thirty percent of individuals are also diagnosed with a psychotic disorder. Our poster describes the current evidence for the management of psychosis in this unique population, for whom effective treatment strategies are not yet well described.

The evidence base for the treatment of psychosis for patients with VCFS is limited to a small number of case reports. These reports describe the use of first and second generation antipsychotics, though often highlight limitations of intolerability and inefficacy, with particular sensitivities likely due to the unique medical comorbidities of the syndrome. In addition to the review of the literature, this poster will also describe the case of a patient presenting with several classic phenotypic anomalies as well as psychosis refractory to pharmacologic interventions, who was ultimately diagnosed with VCFS. Our team pursued electroconvulsive therapy (ECT) with successful remission of the patient's debilitating positive psychotic symptoms. We suggest that ECT is a safe and effective treatment option for patients with treatment refractory psychosis secondary to VCFS.

**NO. 13**

**DELUSION OF PREGNANCY IN A MALE: A CASE REPORT**

*Lead Author: Andres A. Avellaneda Ojeda, M.D.*
*Co-Author(s): John H. Coverdale, M.D., Izabella Dutra De Abreu, M.D., Nidal Moukaddam, M.D.*

**SUMMARY:**

Introduction
Delusions of pregnancy have been reported in patients with

varying age groups although rarely in male patients.
Case presentation
This case report describes a delusion of pregnancy in a 24 –year old male patient with a past psychiatric history of bipolar disorder and mental retardation. He presented with multiple psychotic symptoms which included paranoia and markedly disorganized thought processes including echolalia and neologisms as well as with a consistent request for "her" genitalia to be removed so "she" could give birth properly. He also reported kinesthetic symptoms of feeling the baby moving, referred to himself as a "pre-mable" or as pre-mature and a girl. The presentation raised concern for potential genital self –mutilation. Physical and neurological examination were essentially normal as were blood biochemistry including thyroid, liver profile, renal profile, urinalysis and urine drug screen (which was negative). Patient responded partially to Risperidone 6mg daily and 1500 mg daily of divalproex sodium without EPS side effects and adequate blood levels of Valproic acid.
Outcome
The delusions of gender subsided by one week of treatment although he remained psychotic and disorganized in speech.
Discussion
This case points out a) the importance of being aware that this type of delusion is not nosologically specific and reported as a wide variety of psychotic disorders including schizophrenia, melancholia as well as dementia and organic causes such as encephalitis or seizures; b) need for awareness of risk of self-mutilation which has not yet been reported in the literature; c) The importance to assess for what initially appeared to be a longstanding, crystallized delusion of pregnancy which turned out to be a short phase of a more chronic presentation of psychiatric symptoms.

**NO. 14**
**UNUSUAL PRESENTATION OF DEMENTIA: A CASE REPORT**
*Lead Author: Jeremy Bass, M.D.*
*Co-Author(s): Victor Torres, M.D.*

**SUMMARY:**
SUMMARY: Dementia is a broad field with many distinct subtypes. Distinguishing subtypes is important as treatments may vary from type to type. However, subtypes are not always easily distinguished as they may have overlapping features. We present a case with unusual presentation and overlapping features of multiple entities.
CASE: A 52 year old Caucasian female who initially presented to ophthalmology for visual difficulty and difficulty recognizing objects for 4 years. Repeated ophthalmological exams revealed no abnormalities. Patient presented with depression and anxiety. Patient had periods of confusion with above visual symptoms. Neurologic evaluation led to MRI, which showed parieto-occipital atrophy. Patient was later hospitalization for hallucinations and "progressive agitation and confusion." B12, TSH, RPR, HIV, Copper, urine drug screen, CSF including glucose, protein, AFB, and India ink were unrevealing. EEG illustrated moderately diffuse encephalopathic process. 3 years after presentation to Ophthalmology, patient presented to a neurologist who noted impoverished speech without dysarthria, "facial twitches" on left side of face, increased tone in upper and lower extremities, and "minimal tremor" of the left hand. Repeat EEG showed bihemispheric sharp and slow wave discharges every 6-7 seconds with intermittent slowing. CSF 14:3:3 was negative. Repeat brain MRI showed "volume loss particularly in the parietal regions." Patient was then diagnosed with Benson's Syndrome. Patient had no response to valproic acid, memantine, galantamine, or haloperidol. Patient later began "pacing," and her husband had to feed her "on the run." Later, she developed an inability to perform ADL's. During hospitalization with examiner, patient had a negative MIBG and positive CSF hepes simplex type 1 culture. Patient was treated with IV valcyclovir and appeared to have stabilization of symptoms. It was later found 2 years later on brain biopsy that patient had "profound loss of neurons with abundant senile plaques reflecting a GRAD classification of definite Alzheimer's disease."
DISCUSSION: It was initially presumed that patient's dementia was an early-onset Alzheimer's type, such as Benson's Syndrome, which presents as a deterioration of the posterior cortex with decrease in visuospatial capabilities, difficulty recognizing objects, and occasionally hallucinations. Herpes Encephalitis typically presents with decreased consciousness, confusion, and personality changes. It is diagnosed by CSF viral culture. In the case report patient presented with a Benson's-like syndrome, though was later found to have active herpes encephalitis. Her neurodegeneration stabilized upon treatment of HSV-1. There is evidence that HSV-1 increases levels of beta-amyloid and senile plaques intracellularly in neurons. The above case illustrates that two diagnosis of different types may be interrelated.

**NO. 15**
**HOARDING BEHAVIOR: NOT LIMITED TO OCD**
*Lead Author: Arnabh Basu, M.B.B.S.*
*Co-Author(s): Nidhi Goel, M.D., Theresa Jacob, Ph.D.*

**SUMMARY:**
Background: Compulsive hoarding or 'excessive collecting and saving behavior, resulting in a cluttered living space and significant distress or impairment' is synonymous in DSM-IV- TR with Obsessive Compulsive Personality Disorder and Obsessive Compulsive Disorder. It is however, not limited to OCD as is documented in steadily accumulating recent and remote literature.
Objective: To study the prevalence of hoarding in adult populations in the inpatient setting and it's co-occurrence within Axis I diagnoses including, but not limited to Major Depression, Schizophrenia, Obsessive Compulsive Disorder, Bipolar Disorder and Dementia.
Methods: After simple random sampling, 200 adults admitted to Maimonides Medical Center inpatient psychiatric units are screened for hoarding using the Hoarding Rating Scale. Those with a score of 14 or more are considered to have clinically significant hoarding and are then compared to Axis I diagnoses from current inpatient admission. Statistical significance was set for p-value at 0.05 or less.
Results: Of the 100 participants so far, a third showed clinically significant hoarding. Their diagnoses included schizophrenia, bipolar disorder, anxiety and substance disorders. Preliminary analyses show that mood disorders and schizophrenia correlate with hoarding behavior and these correlations appear to trend towards significance.
Conclusions: Our data reveal prevalence of hoarding in DSM-IV-TR Axis I conditions including mood disorders, schizophrenia, cognitive disorders and substance disorders. This indicates a

need for the clinician to be mindful of the fact that hoarding manifests in many forms of mental illness and is not limited to OCD alone.

**NO. 16**

**SUICIDE BEHAVIOR AND BULLYING IN CHILDREN WITH PSYCHIATRIC DISORDERS AND GENERAL POPULATION SAMPLES**

*Lead Author: Raman Baweja, M.D.*
*Co-Author(s): Susan Dickerson Mayes, Ph.D., Susan L. Calhoun, Ph.D., Ehsan Syed, M.D., Fauzia Mahr, M.D., Farhat Siddiqui, M.D.*

**SUMMARY:**
Background: Bullying is of huge national and international concern, and massive efforts are underway to reduce bullying and its consequences. Across studies, the median percentage of children and adolescents who are neither a bully nor victim is 62%, whereas 17% are victims only, 13% are bullies only, and 6% are bully/victims. Studies of the relationship between bullying and suicide behavior yield mixed results.
Aims: This is the first study to compare frequencies of suicide behavior in four bullying groups (bully, victim, bully/victim, and neither) in two large psychiatric and community samples of young children.
Methods: Maternal ratings of bullying and suicide ideation and attempts were analyzed in 1,291 children with psychiatric disorders and 658 children in the general population 6 to 18 years of age. Children in the psychiatric sample included those with ADHD, autism, oppositional defiant disorder, anxiety, depression, and eating disorders. Results: For both the psychiatric and community samples, suicide ideation and attempt scores for bully/victims were significantly higher than for victims only and for neither bullies nor victims. Differences between victims only and neither victims nor bullies were nonsignificant. Controlling for conduct problems and sadness, suicide behavior did not differ between the four bullying groups. All children with suicide attempts had a comorbid psychiatric disorder, as did all but two children with suicide ideation.
Conclusions: Although the contribution of bullying per se to suicide behavior independent of sadness and conduct problems is small, bullying has obvious negative psychological consequences, which make intervention imperative. Interventions need to focus on the psychopathology associated with being a victim and/or perpetrator of bullying in order to reduce suicide behavior.

**NO. 17**

**"I WON'T GO TO SCHOOL!": A CASE REPORT AND LITERATURE REVIEW OF SCHOOL REFUSAL**

*Lead Author: Smita V Bhatt, M.D.*
*Co-Author(s): Gayathri Mahendiran, M.D.*

**SUMMARY:**
Background: School Refusal is considered one of the most prevalent behavioral disorders among school aged children and a common challenge for the Child Psychiatrist. It can be the result of comorbid psychiatric disorders such as Separation Anxiety Disorder, Social Phobia, Generalized Anxiety Disorders and Major Depression. These tasks are made even more difficult with potentially the limited cognitive development and inability to express emotions in a child. This case not only illustrates features of school refusal, but also highlights psychiatric conditions most commonly associated. School Refusal can lead to low academic achievement further jeopardizing the social, emotional and academic development. Interventions include educational support, Anxiety focused CBT therapy, a hierarchical exposure program, behavior modification, parent/teacher interventions, and pharmacotherapy. It requires coordination with parents, teachers, school officials and staff.
Objectives: Here, we present a case of School Refusal in a 12-year-old male who had a protracted course. Here participants will: (1)Understand the epidemiology of School Refusal (2) Identify Comorbid Disorders with School Refusal (3) Understand the diagnosis and barriers to treatment (4) Appreciate recent interventions for School Refusers.
Case: (Some details of this case have been altered to protect anonymity, without significantly changing the case history.)
A 12 year old single Caucasian male with school refusal. The patient was referred to outpatient evaluation. He had no previous medical or psychiatric hospitalizations. Collateral information from father and school indicated patient has been lonely since their recent move to his father's residence along with his mother "leaving" the family. He was initiated on low-dose fluoxetine for alleviation of depressive and anxiety symptoms along with his therapy. Even with initiation of these antidepressant medications, the patient's symptoms persisted and he continued to refuse attendance.

**NO. 18**

**TREATMENT CHALLENGE: MULTIPLE RARE SIDE-EFFECTS IN A PATIENT WITH BIPOLAR DISORDER**

*Lead Author: Shyamala D. Bheemisetty, M.D.*
*Co-Author(s): Kishan Nallapula, M.D.*

**SUMMARY:**
INTRODUCTION: Bipolar disorder is a very common psychiatric diagnosis and the prevalence in the continental United States is estimated to be 0.6% as per DSM-5. Mood stabilizers like Lithium and Divalproex are the first line treatment for Bipolar disorder. Depending on the presenting episode, APA guidelines suggest using different evidence based strategies for the management. Here we wish to present a patient who developed side-effects to standard treatment that resulted in a treatment conundrum and a breakthrough manic episode.

CASE: Patient is a 45 year old male with a history of bipolar disorder for >15 years and Type 1 Diabetes Mellitus. Patient was stable on Divalproex for 15 years until he developed pancreatitis, which resulted in discontinuation. Patient was switched to Quetiapine and Loxapine. Patient had an inpatient psychiatric hospitalization due to a manic episode and was started on Lithium 300 mg three times a day with discontinuation of Loxapine. Following this, patient developed lithium toxicity and needed dialysis. Patient also developed lens opacities, which were suspected due to Quetiapine, and it was discontinued. Then he was on Aripiprazole for about 1 year. He developed a urinary tract infection leading to delirium. His delirium did not respond to Aripiprazole dosing adjustments. Aripiprazole was discontinued and he was started on Olanzapine for delirium and mood stabilization. Patient is currently on olanzapine 5mg in the morning and 15 mg at bedtime.
DISCUSSION: Literature review was performed through

MEDLINE and PUBMED for the incidences of side effects. Only case reports/series have been reported for pancreatitis due to Divalproex. Incidence is estimated to be at 1:40,000. Reports suggest that this side effect is more common in women and children.
Quetiapine does have lens changes listed by the manufacturer, however literature does not recommend annual eye exams for patients on Quetiapine. It is thought that lens changes are due to other medications like statins, which our patient was prescribed.
Therapeutic Lithium level is 0.6-1.2 meq/l. Toxicity requires dialysis when the levels are >2.5meq/l. Our patient also had type 1 Diabetes mellitus which could have compromised renal functions leading to toxicity at lower doses.
Aripiprazole is FDA approved for bipolar disorder. However there are only case reports available for its usage in Delirium. No randomized controlled trials have been done .
This patient presents a treatment challenge due to development of multiple side effects, which resulted in treatment changes in a span of 2- 3 years. Olanzapine would not be a long term choice in our patient due to underlying diabetes. Would it be reasonable to switch the patient back to Aripiprazole? What would be the best mood stabilizer in a patient with a propensity to develop side effects? Any additional medical or metabolic considerations?

**NO. 19**

**ATTEMPTED SUICIDE BY A MILITARY LEADER: A RESULT OF A BRIEF PSYCHOSIS, MAJOR DEPRESSION, OR DISSOCIATION?**

*Lead Author: William Bianchi, M.Sc.*
*Co-Author(s): Erika Kappes, DO, Patcho Santiago, MD, Alyssa Soumoff, MD; Harold Wain, PhD, FAPM*

**SUMMARY:**

Background: The patient presenting after a spontaneous suicide attempt confers a complicated diagnostic scenario; the patient presents with characteristics of acute psychosis, depression, and/or possibly dissociation. While the diagnostic criteria for psychosis and depression are well established, the clinical definition of Dissociative Disorders continues to evolve. Other Specified Dissociative Disorder (OSDD) is the DSM-V clinical diagnosis that replaces the previous DSM-IV diagnosis Dissociative Disorder Not Otherwise Specified. Clinical diagnosis of OSDD requires a lack of evidence that a physical disorder would explain the patient's symptoms and the need to have a convincing temporal association between the symptoms of disorder and stressful events. Dissociation in traditional psychoanalytic theory is an unconscious ego defense where the patient may experience a temporary change in personality, consciousness, memory, motor behavior, or all of the above. This defense is employed in an attempt to avoid emotional conflict or stress in order to maintain one's self schema. We present the case of a spontaneous attempted suicide by a military leader who exhibited many of the characteristics cited above.
Case: The patient is a 44 year old male military leader of security forces at an overseas base. He had no prior psychiatric history and no significant past medical history. The patient attempted suicide by using a knife, sustaining multiple self-inflicted lacerations to his bilateral neck and both upper extremities. Police responded to the incident and, in an attempt to subdue the patient, shot him several times in both lower extremities. The patient was stabilized at a local hospital and medically evacuated for further treatment and evaluation at a tertiary military medical center in the continental United States. In the initial stages of evaluation he began to describe feelings of guilt and shame. He also reported a three week history of obsessive thoughts and delusions, as well as several neurovegetative symptoms of depression. He recounted a feeling of "detachment" from his surroundings for several days leading up to the event and provided a depiction of his suicide attempt that was consistent with descriptions of a dissociative response.
Discussion: The clinical management of a patient who reports dissociation during a suicide attempt may change significantly based on whether the patient is utilizing a dissociative defense mechanism, has experienced a brief psychosis, or suffers from OSDD versus major depression. In a military context, the implications of the diagnosis vary significantly when the patient is a high ranking officer with command and control of a large force. In addition, the status of security clearance and implementation of treatment strategies to prevent reoccurrence of these behaviors also needs to be addressed.

**NO. 20**

**SSRI DISCONTINUATION SYNDROME FOLLOWING BARIATRIC SURGERY: A CASE REPORT AND FOCUSED LITERATURE REVIEW**

*Lead Author: Kathleen Bingham, M.D.*
*Co-Author(s): Raed Hawa, M.D., F.R.C.P.C., D.A.B.S.M., D.A.B.P.N., Sanjeev Sockalingam, M.D., F.R.C.P.C.*

**SUMMARY:**

Bariatric surgery is an increasingly common treatment option for patients with morbid obesity and is the only procedure consistently shown to achieve long-term weight loss. It has been established that morbid obesity and psychiatric disorders are frequently comorbid, particularly depression, which is present in approximately 20-50% of patients undergoing bariatric surgery in the United States. Given the prevalence of depression and other psychiatric disorders requiring antidepressant (AD) treatment in this population and the deleterious effects of untreated or under-treated psychiatric symptoms (including sub-optimal weight loss and, rarely, suicide) following bariatric surgery, it is imperative that we develop evidence-based approaches for managing these disorders peri-operatively.
There is a small, but emerging literature on pharmacokinetic changes of antidepressants post-bariatric surgery. Hamad et al (AJP; 2012) identified reduced bioavailability at one month post-op for a variety of SSRI's for the majority of patients in a small cohort followed prospectively post-gastric bypass surgery. A subset of these patients experienced an exacerbation of depressive symptoms that improved with normalization of SSRI bioavailability.
There is limited literature on the occurrence of the SSRI discontinuation syndrome post-bariatric surgery, hypothetically a risk given the decreased absorption of these medications during this period. Furthermore, patients on AD's with short half-lives, such as paroxetine and venlafaxine, may be at higher risk of this syndrome.
We report on the case of a 43 year-old woman with a history of panic disorder, in remission for ten years on paroxetine 30 mg daily. She underwent a Roux-en-Y gastric bypass procedure to treat morbid obesity (initial BMI 40.4) associated with osteoarthritis, dyslipidemia and hypertension. Within the first

three days post-operatively, she began to experience increased anxiety, irritability, emotional lability, and flu-like symptoms, as well as a recurrence of her panic attacks, despite continuing on her usual dose of paroxetine. Her irritability became so severe that she was physically aggressive toward her husband during a disagreement, behaviour that was significantly out of character for her. Her discontinuation symptoms improved, but her panic attacks persisted. This prompted her to see her former psychiatrist two months after surgery, who increased her paroxetine to 30 mg in the morning and 20 mg at bedtime. This adjustment resulted in complete resolution of her anxiety symptoms. Four months post-surgery, her BMI was 31.3 and her medical comorbidities had significantly improved.
This case highlights the importance of close monitoring of psychiatric status post-bariatric surgery, and raises the question of the need for additional monitoring and education/pre-operative preparation regarding SSRI discontinuation syndrome for patients on AD's with short half-lives.

**NO. 21**

**MAJOR REPETITION OF SUICIDAL BEHAVIOR: A CLINICAL MARKER OF PERSONALITY DISORDERS?**

Lead Author: Hilario Blasco-Fontecilla, M.D., Ph.D.
*Co-Author(s): Nuria Berenguer-Elias, M.D., Paula Artieda-Urrutia, M.D., Juan Manuel García-Vega, M.D., Mónica Fernández-Rodriguez, M.D., Isabel González-Villalobos, M.D., Cesar Rodriguez-Lomas, M.D., María Martín-García, M.D., Rocío Blanco-Fernández, M.D., Gomez-Arnau J, M.D., Courtet P, M.D.*

**SUMMARY:**
Introduction: The discovery of biomarkers for major mental disorders is a promising area of research. Unfortunately, we are still far away from a clinical application. In this context, clinical markers may assist the decision-making process of clinicians. We have previously described that major repeaters (individuals with ≥5 lifetime suicide attempts) might be a distinctive clinical phenotype of suicidal behavior characterized by a characteristic socio-demographic (i.e. female gender, low education) and clinical profile (i.e. substance dependence, anorexia nervosa, trait anger). However, more research is needed to clearly establish the differential profile of major repeaters.
Objectives: 1. To further explore if major repeaters are a distinctive clinical phenotype of suicide attemtpers.
2. To test if a diagnosis of personality disorder is a marker of major repeaters.
Material and methods: Sample and procedure: This is a cross-sectional study. All 84 suicide attempters admitted to an emergency department at Puerta de Hierro University Hospital (Madrid, Spain) were included. Statistical Analyses: Univariate analyses of the associations between major repeaters and individual characteristics (sociodemographic factors, and personal antecedents of Axis I and II diagnoses) were carried out. Significance level was set at $P < 0.05$. All analyses were carried out using SPSS v.20 (Macintosh).
Results: five (6%) suicide attempters were major repeaters. Major repeaters were more frequently females as compared with non-major suicide attempters (100% vs. 67.1%; non significant, ns). No further sociodemographic factors differentiated between major and non-major suicide attempters. With regard to Axis I and II antecedents, when compared to non-major attempters, major repeaters were more likely to have been diagnosed with a personality disorder (100% vs. 16.5%, FET $p<0.001$) and eating disorders (40.1% vs. 5.1%; FET $p=0.039$). They were also more likely to have been hospitalized in a psychiatric unit (60% vs. 21.8%; ns).
Conclusions: The most relevant finding of the present study is that major repeaters are characterized by the presence of antecedents of personality disorders and eating disorders. Our findings are in keeping with available literature. We would like to stress that major repetition of suicide attempts might be a clinical marker of personality disorders. The major limitation of the present study is the small size that hampers the generalization of our results. Another limitation is that we did not use standardized questionnaires to evaluate personality disorders. Studies with larger samples are warranted.
References:
1.Blasco-Fontecilla, H., Olie E, Jaussent I, et al. Major repeaters: a distinct phenotype of suicidal behavior? Submitted J Clin Psychiatry
2.Kreitman N, Foster J. The construction and selection of predictive scales, with special reference to parasuicide. Br J Psychiatry 1991 Aug;159:185-192.

**NO. 22**

**ANTIDEPRESSANT CONSIDERATIONS IN A PATIENT WITH CIRRHOSIS AND A HISTORY OF UPPER GI BLEEDING**

*Lead Author: Marc A. Bouchard, D.O.*

**SUMMARY:**
Introduction: The prevalence of chronic liver disease, or cirrhosis, has been estimated to be roughly 400,000 people in the United States. Common complications of liver disease include portal hypertension, upper gastrointestinal bleeding (UGIB), encephalopathy, and depression. Depression is common in patients with advanced liver disease, and has been estimated to occur in up to 60% or more of this population. It is imperative that these patients are managed properly as poorly treated depression in patients with liver disease has been linked to lower long-term survival rates. This case illustrates a patient with cirrhosis and co-morbid depression, and some of the common concerns faced when dealing with this unique and complex population.
Case: The patient is a 19 y/o Caucasian female with Childs-Pugh class A cirrhosis with no previous history of psychiatric disorders whom presented to the behavioral health department complaining of depressed mood with anxiety. Her liver disease initially presented as abdominal pain, peptic ulcer, and anemia, about eight months prior to presenting to behavioral health. She had since been medically stabilized and placed on the transplant list. Routine lab work was remarkable only for chronically elevated AST and ALT, and thrombocytopenia of approximately 60K. The patient required treatment for her reported anxiety and mood: lorazepam was selected for acute anxiolysis due to its short half-life and lack of active metabolites, and mirtazapine was selected for depression due to its moderate level of hepatic extraction and low 5-HT affinity.
Conclusion: Patients with chronic liver disease necessitating transplant commonly suffer from depression. Psychotropic pharmacology in this unique population can be difficult due to changing pharmacokinetics as liver disease progresses. Additionally, patients with cirrhosis commonly experience hemodynamic and hematologic complications such as esopha-

geal varices, gastrointestinal bleeds, and thrombocytopenia. Management of these patients requires close attention to not only anti-depressant dosing and drug-drug interactions, but also agent 5-HT transporter affinity and propensity to precipitate subsequent bleeds in susceptible patients.

**NO. 23**

**A CASE OF LIMBIC ENCEPHALITIS INITIALLY MISDIAGNOSED AS A PRIMARY PSYCHIATRIC DISORDER**

*Lead Author: Neil J. Brahmbhatt, D.O.*
*Co-Author(s): Reggie Aulakh, M.D.Thomas Heinrich, M.D. Suraj Singh, M.D.*

**SUMMARY:**
Background:
Paraneoplastic limbic encephalitis (PLE) is a rare clinical entity that can present with myriad of neuropsychiatric signs and symptoms; including personality changes, psychiatric symptoms and non-focal neurological signs. The presentation of PLE may be insidious; occurring gradually over days, weeks, or even months. It is most commonly associated with a malignancy and the pathogenesis is thought to be autoimmune and involves antigens shared by the tumor and neuronal cells in the mesial temporal and limbic structures (1). The case of PLE presented highlights how the initial presentation of PLE may mimic a primary psychiatric illness and lead to misdiagnosis and delayed treatment.
Case History:
A 35 year old male was admitted to a psychiatric facility with anxiety, depression, and suicidal ideation. He was eventually transferred to a medical hospital for a thorough neurologic work-up secondary to treatment resistance and worsening memory. A physical examination revealed a testicular mass. Subsequent biopsy followed by a radical orchiectomy revealed a regressed germ cell tumor. A MRI revealed mild T2 signal abnormalities involving bilateral anteromedial temporal lobes. CSF was positive for anti-Ma1 and Ma2 antibodies. IVIG and plasma exchange resulted in minimal improvement. Repeat MRI showed new hyperintensities involving left gyrus rectus, anteroinferior medial frontal lobes bilaterally and bilateral anterior cingulate gyrus. Trials of rituximab and cyclophosamide are being considered.
Conclusion:
PLE presents as a diagnostic challenge. An elevated index of suspicion in the setting of new and/or atypical onset neuropsychiatric symptoms may lead to early recognition, treatment, and improved outcome.

**NO. 24**

**POOR IMPULSE CONTROL ASSOCIATED WITH PAN-HYPOPITUITARISM: TWO CASE REPORTS**

*Lead Author: Marin Broucek, M.D.*
*Co-Author(s): Monica Arora, MDVenkata Kolli MBBS, MRCPSych Ann Makar, M3 Student*

**SUMMARY:**
Aims: Participants will be able to understand the role of neuropeptides in brain development, and their role in modulating impulse control, using 2 cases of pan-hypopituitarism.
Background: Neuropeptides from the hypothalamic-pituitary axis play an important role in brain development. We report 2 cases of pan-hypopituitarism treated with hormone replacement that presented with poor impulse control and aggression.
Case reports:
Case 1: 18-year-old female with pan-hypopituitarism following shunt revision procedures for hydrocephalus as an infant, presents with a 5-year history of poor impulse control and aggression towards family members. She also exhibited episodic mood symptoms and suicidal ideation warranting inpatient hospitalization.
Case 2: 18-year-old female with pan-hypopituitarism secondary to resection of a craniopharyngeoma at the age of 2, presents with aggression and violence towards family members. She has been exhibiting irritability from the age of 2 and assaultive behavior since age 8.
Aggression and poor impulse control in these patients warranted admission to inpatient units and several psychosocial rehabilitation residential treatment facilities. Medication trials that included antidepressants, mood stabilizers and antipsychotic agents showed only partial improvement.
Discussion:
Mass lesions and congenital conditions cause pan-hypopituitarism. Treatment includes replacement of growth hormones, corticosteroids, and thyroid and sex hormones. Knowledge on the role of oxytocin and vasopressin (AVP) in neurodevelopment is expanding; AVPR1a receptor is modulated by oxytocin, and is implicated in anxiety and aggression in animal models. Our literature search did not reveal any previous reports of pan-hypopituitarism associated with aggression. We discuss possible neuroendocrine hypotheses that explain the presentation in the 2 case reports.
References:
Skuse DH, Gallagher L. Dopaminergic-neuropeptide interactions in the social brain. Trends Cogn Sci. 2009 Jan;13(1):27-35.

**NO. 25**

**ACUTE MANIA PRECIPITATED BY SYNTHETIC CANNABINOID INTOXICATION**

*Lead Author: Cameron Brown, D.O.*
*Co-Author(s): Duda, Roger, MD*

**SUMMARY:**
Objectives: 1. Illustrate the anatomy and neurophysiology associated with the Endocannabinoid system, in regards to the two receptors, CBR1 and CBR2. 2. Understand the differences in the structures of THC and SCBs, and SCBs different effect on the Cannabinoid receptors. 3. Demonstrate the overlap between the Endocannabinoid system and current pathophysiologic theory of acute mania.
Background: Synthetic Cannabinoids (SCBs) have recently been introduced as a designer drug alternative to Cannabis. Marketed with names such as “Spice” and “K2,” use of these has been prevalent, especially in the military, as they are believed to be safe and undetectable by standard drug screens and despite being made illegal at a federal level in 2011. Unlike Tetrahydrocannabinol (THC), SCBs are a group of varied, synthetic compounds, affecting Cannabinoid receptors differently. As a result, effects of SCBs are more unpredictable and distinct from those of THC.
Case Description: Patient was a 21- year Army male of Hispanic origin. Patient was referred to behavioral health due to superior’s concern for changes in behavior. Upon interview, patient

exhibited pressured speech, grandiosity, flight of ideas and tangentiality. Pt stated that he had recently been working on his ability to read minds. Pt had no notable psychiatric history. It was later revealed that patient had been a frequent Cannabis user prior to joining the Army and had started using SCBs for the past two months and the morning of the day he presented. Patient's symptoms lessened in degree with eventual resolution over a four day course with no pharmacological intervention. Conclusion: Due to a distinct mechanism of action on the Endocannabinoid system, SCBs can produce presentations that would not be suspected of intoxication with THC. For this reason, screening for use of SCBs should be considered an important aspect of any psychiatric interview.

**NO. 26**

**ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS, QUALITY OF LIFE AND FUNCTIONALITY IN PSYCHIATRIC OUTPATIENTS**

*Lead Author: Adriana G. Bueno*
*Co-Author(s): Ana C. Lucchese, Clarissa S. Rogel, Aline Cacozzi, Luciana M. Sarin, José A. DelPorto, Sérgio B. Andreoli*

**SUMMARY:**
INTRODUCTION: The Affective disorders are very disabling and prevalent psychiatric disorders. In the metropolitan region of São Paulo, an estimated 12-month prevalence of 9.4% for major depression (MD) and 1.5% of Bipolar Disorder I or II (TAB) (Andrade, 2012). Both the DM and the TAB are often under-diagnosed and inadequately treated, resulting in a large number of chronic and refractory patients. According to Quintana et al in a study of 2013, in Rio de Janeiro, only 19% of patients diagnosed with moderate to severe depression received some type of medical treatment. The monitoring and evaluation of these patients use up some methodological tools such as Hamilton Rating Scale for Depression (HAM-D), which provides quantitative scores of depressive symptoms. But the overall improvement of the patient should also be evaluated for aspects of quality of life and disability.
OBJECTIVE: The study of the association between depressive symptoms and dimensions of quality of life (QOL) and functionality in psychiatric outpatients.
METHODS: 41 patients of the Ambulatory of Affective Diseases and Anxiety from UNIFESP with Affective Disorders diagnosed with SCID-CV, were evaluated. Symptoms of depression were rated with the Hamilton Rating Scale (HAM-D), quality of life, using the SF-36 and functionality through the Sheehan Disability Scale (SDS). The SF-36 assesses eight dimensions: physical functioning, role limitations due to physical, bodily pain, general health, vitality, social functioning, emotional and mental health and SDS assesses three areas of functionality: Work / Study, Family and Social / Responsibilities Home. The association between symptoms, QOL and functionality has been made with the Pearson correlation analysis, with 5% significance level.
RESULTS: 82% were female, 56% married, 85% resides in São Paulo, 41% unemployed, 95% have family support, 88% are independent. Unipolar depressive 66% and 34% bipolar, 46.3% have at least one suicide attempt, 100% uses medication, 25% does psychotherapy and 56% have a relative 1o degree with mood disorder. The correlations between depressive symptoms were reversed and significant for 5 of the 8 dimensions of QOL: physical functioning (r = -0,423), general health (r = -0,416), vitality (r = -0,486), role emotional (r = -0,381) and mental health (r = -0,359). The correlations between symptoms were positive and significant for all dimensions of functionality: work / study (r = 0,369), social functioning (r = 0,511), family / responsibilities (r = 0,363).
CONCLUSION: depressive symptoms affect the functionality of the patient, but do not compromise all dimensions of the quality of life. This discrepancy may be related to the observations reported in the literature, that the decrease in the number of symptoms evaluated by the HAM-D is not absolute to prove the clinical improvement and other aspects are associated to remission. (FAPESP, 2012/23769-5).

**NO. 27**

**TINNITUS IMPROVED BY PRAZOSIN**

*Lead Author: Svetlana Caragheaur*

**SUMMARY**:
Tinnitus, nightmares, depression, PTSD: a case report of tinnitus improvement by treating combat related nightmares with Prazosin.
Svetlana Caragheaur MD, Bryan Bacon DO
Introduction: Tinnitus is a perception of sound in proximity to the head in the absence of an external source. Tinnitus is most commonly associated with hearing loss, though it may be a presenting symptom of vascular or neurological abnormalities. Treatment for tinnitus includes correcting identified co morbidities and addressing the effects of tinnitus on quality of life. Current recommendations are to treat the underlying depression and insomnia, as these conditions may exacerbate symptoms of tinnitus. There is inconclusive evidence for the effectiveness of antidepressants for treatment of tinnitus. Patients with tinnitus who have insomnia should be treated for their sleep disorder with the goal of reducing the severity of tinnitus. Some medications may have modest efficacy in the treatment of tinnitus: misoprostol, lidocaine (either intratympanic or intravenous), alprazolam, dexamethasone (intratympanic).
Case: A 43 year old white male active duty US Sailor presented with depression, nightmares and insomnia with multiple interruptions due to extremely loud tinnitus. He was diagnosed with Adjustment Disorder with depressed mood, PTSD, and Insomnia. escitalopram (SSRI) was initiated for his depression and PTSD. Prazosin and Image Rehearsal Therapy was initiated for his nightmares. The Patient followed a strict sleep hygiene. After two weeks of treatment the patient reported no nightmares and lessened tinnitus with improvement in quality of life. There were days when he did not take his escitalopram, however he did not notice any change in his tinnitus. The Patient noticed a worsening of tinnitus during the day when he did not take Prazosin at night due to an orthostatic side effect. Currently he wears a masking device that reduces the perception of tinnitus, however the patient clearly noticed a decrease in tinnitus while using Prazosin and an increase in tinnitus when he did not take the medication.
Discussion: In this particular patient Prazosin was given for the treatment of nightmares, however he reported not only improvement in his sleep but also a lessened tinnitus sound during both day and night. There are no reported cases of tinnitus treated with Prazosin. In fact some patients taking Prazosin had reported tinnitus as a side effect of the medication.
Conclusion: The goal of treatment for most patients with

tinnitus is to reduce the symptoms and improve qualitof life. Currently there are no medications known to effectively reduce the tinnitus symptoms. Prazosin helped patient's nightmares and reduced the severity of tinnitus.

**NO. 28**

**PHARMACOGENETIC TESTING TO ILLUSTRATE UNIQUE RESPONSE TO OPIATES IN REFACTORY DEPRESSION**

*Lead Author: Roberto Castanos, M.D.*
*Co-Author(s): Steven Aguilar, M.D., Gerald A. Maguire, M.D.*

**SUMMARY:**

Pharmacogenetic testing is a recently developed technology to help guide treatment, especially in refractory illnesses. While the use of this testing is becoming more frequent, there are no cases in the literature illustrating its use with refractory depression responsive only to opioids. Here, we present a case of a 22 year-old male with severe, recurrent major depressive disorder refractory to psychotropic medication treatment since adolescence. He has been treated with anti-depressants, including several medications from the SSRI, SNRI, and TCA classes, to which he developed intolerable, severe side effects or had no response. He refuses to continue on newer anti-depressants for more than a few weeks if they have not improved his mood for fear of side effects, despite reassurance. Stimulants, anti-psychotics, mood stabilizers, and ketamine had little to no effect on mood and/or intolerable side effects. Coincidentally, he was given oxycodone after minor surgery. He had improvement in mood within a day. After the opioids were discontinued he again became depressed. He has also tried hydrocodone, with benefit to mood, as well as codeine, with no benefit to mood. At this point, a pharmacogenetic test was performed that showed that the patient was a poor metabolizer at CYP2D6, consistent not only with his intolerable side effects to most psychotropics, but also the lack of effect of codeine on mood. Without CYP2D6 activity codeine is not converted to morphine. Likewise, any pro-drug requiring conversion via CYP2D6 would also fail. The test also showed moderate SLC6A4 activity, indicative of increased response time to SSRIs. While the patient does respond to opioids, he is very hesitant to try any other psychotropics because of the severe side effects he experienced. Early pharmacogenetic testing may have prevented his aversion to psychotropic medications by immediately ruling out the medications the test showed he would not tolerate. Furthermore, gene testing showed that he could gain benefit from anti-depressants not processed by 2D6, but that the benefit would take longer than standard treatment times. Lastly, his positive and almost immediate response to opioids, when many other psychotropics have failed, warrants further study in the treatment of refractory depression.

**NO. 29**

**THE BOUNDARY BETWEEN TIC DISORDER AND OBSESSIVE-COMPULSIVE DISORDER: ADOPTING A TOURETTIC OCD FRAMEWORK**

*Lead Author: Ashley D. Cesar, M.D., M.S.*
*Co-Author(s): CPT(P) Sherrell Lam, MD*

**SUMMARY:**

Introduction: There is little literature on adult-onset tics. A particular challenge is in differentiating tic disorders from comorbid obsessive-compulsive disorder. Adopting a Tourettic Obsessive Compulsive Disorder (OCD) conceptual framework can facilitate more accurate diagnosis and management of these individuals. The case of an otherwise healthy adult male who presented with complex anxiety symptoms resembling Tourette Syndrome (TD) is used to illustrate the diagnostic and therapeutic challenges posed by these conditions.

Case: A 24yo Navy sailor was referred to Walter Reed Bethesda for severe anxiety and suspected new-onset tic disorder following multiple precipitating events and life stressors. Symptoms persisted despite treatment with anxiolytics and an FDA approved medication for OCD. The patient reported a history of panic symptoms, twitching, throat clearing, stuttering, and facial grimacing. The patient's obsession with symmetry and orderliness jeopardized his performance in his profession. The patient also experienced recurrent intrusive images of his stressors, and harbored an intense, unfounded fear that his significant other would harm herself.

After a thorough neurologic evaluation in a Movement Disorder clinic, tic disorder was excluded and patient was given a diagnosis of OCD, Anxiety and Conversion Disorder. He was subsequently switched to another FDA approved medication for OCD after a sustained period of unimproved symptoms.

Discussion:

Our case illustrates the difficulties in separating tic disorder from OCD. The introduction of Tourettic Obsessive Compulsive Disorder (TOCD) in the literature attempts to address this problem.

20-60% of TD sufferers display OCD symptoms. TD and OCD symptoms can coexist even thought the individual may not meet all criteria for TD or OCD.

It is important to consider the diagnosis of TOCD, as these patients tend to benefit more from SSRI augmentation with low-dose neuroleptics or alpha 2 agonists, neuroleptic monotherapy, or alpha 2 monotherapy more than traditional OCD patients.

**NO. 30**

**MENTAL HEALTH IN THE MOVIES: FROM CREATING STIGMA TO FACILITATING RECOVERY**

*Lead Author: Ashley Chaffin, M.D.*
*Co-Author(s): Erik Frost, M.D.*

**SUMMARY:**

Negative depictions of mental health are prevalent throughout the media and create additional barriers to effective treatment of mental health patients. There has been much discussion in the literature on how to affect the media to decrease the stigma it creates, and how to use it as an educational tool for future doctors. Popular media can also be utilized in the treatment of the patient. We sought to explore mental health in the media, focusing on one treatment approach using movies in group therapy.

Method: We present an outpatient group that was designed to address mental health stigma in patients that were reluctant to seek treatment through conventional modalities. During each session, the group viewed a portion of a film and then processed the relevant topics. The group was initially designed to address barriers to treatment in order to facilitate future treatment of their psychiatric diagnosis through more conventional modalities. However, during the course of the group, the focus

shifted towards processing their emotions and experiences elicited by the films.
Discussion: While there appears to be a significant amount of literature regarding the utilization of movies in individual and group therapy, it does not appear to be a commonly used modality. Our experience demonstrates "cinematherapy" is an effective and versatile modality for treating patients that are reluctant to receive conventional therapy. It is a method that should be studied further and considered in populations that are reluctant to seek treatment.

**NO. 31**

**RUNNING FOR YOUR LIFE! A REVIEW OF PHYSICAL THERAPY FOR CARDIOVASCULAR DISEASE RISK REDUCTION IN INDIVIDUALS WITH SCHIZOPHRENIA**

*Lead Author: Claire Chalfoun, M.D.*
*Co-Author(s): Abdel-Baki Amal, M.D., Karelis A, Ph.D., Stip E, M.D.*

**SUMMARY:**

BACKGROUND: Individuals with schizophrenia (SCZ) are at risk of metabolic syndrome, cardiovascular disease (CVD) and lowered life expectancy partly due to second-generation antipsychotics and unhealthy lifestyles (smoking, poor nutrition and low physical activity). Non-pharmacological interventions (e.g. cognitive behavioural therapy (CBT), medication, diet, physical exercise) have been studied in SCZ. Physical activity has been shown to be the best strategy to improve both cardio-metabolic parameters (waist circumference, blood glucose/lipid profiles, etc.) and cardio-respiratory fitness (VO2 max) in the general population.
OBJECTIVE: Conduct a critical literature review of non-pharmacological interventions that included a physical activity component and aimed at reducing cardiovascular risk factors in SCZ. Determine its specific contribution by reviewing trials of supervised exercise only.
METHODS: We undertook a literature review via systematic keyword search for publications in Medline, PubMed, Embase and PsycINFO databases.
RESULTS: Although the study methodologies and reviewed results are heterogeneous, many interventions (CBT, diet, exercise, medication) have proven to be somewhat efficient in reducing CVD risk, but the specific contribution of one or another is indistinguishable since they are usually combined. Among these interventions, physical activity has been successful in decreasing CVD risk, and high intensity interval training appears to provide the most benefit by specifically targeting cardio-respiratory fitness.
CONCLUSIONS: Exercise therapy is an effective strategy for addressing CVD risk in SCZ. Additional long-term studies are needed to evaluate the feasibility and impact of exercise programmes in SCZ.

**NO. 32**

**POSSESSED BY THE DEVIL: A CASE REPORT AND REVIEW OF CHILDHOOD PSYCHOSIS AND SPIRITUAL BELIEF IMPLICATIONS IN MENTAL ILLNESS**

*Lead Author: Michelle Chaney, M.D., M.Sc.*
*Co-Author(s): Almari Ginory, D.O.*

**SUMMARY:**

Beliefs in supernatural involvement in illness and suffering exist in many societies, with "universal references to malevolent spirits, demonic possession and rites of exorcism" (Leavy, 2010). Demonic possession often refers "to a state where a person's being has been invaded and captivated by an external, usually malevolent force to the extent that the person possessed is no longer in control of his or her actions" (Leavy, 2010). Herein, we present a case of a 9 year-old African American female brought to the ED after her family, members of the Pentecostal Deliverance Church, tried to perform an exorcism in their front yard due to concerns the patient was taken over by "demonic spirits." The patient reportedly shouted out for help and started to cry before trying to bite people, growling like an animal and swinging her fists uncontrollably for about an hour. Her altered mental status resolved shortly after arrival to the ED. In addition to presenting this case, reviewing the work-up and evaluation of possible childhood psychosis, we further discuss these religious views and their implications for mental health treatment. As seen in this case, religious beliefs greatly influence the decision to seek professional help. Physicians need to be sensitive to these cultural and religious ideas, particularly when there is a belief that mental illness is traceable to supernatural causes.

**NO. 33**

**ANTIPSYCHOTIC-INDUCED HYPOTHERMIA: A CASE PRESENTATION**

*Lead Author: San K. Chang, M.D.*
*Co-Author(s): Puja R. Toprani, B.S., Robert N. Averbuch, M.D.*

**SUMMARY:**

Introduction:
Soon after chlorpromazine was synthesized in 1950, it became known that it could be used to induce hypothermia for surgical purposes. As of 2007, the WHO database recorded a total of 480 cases of neuroleptic induced hypothermia in patients who were predominantly schizophrenic.
Case report:
This is a 60 yo African American female with a history of schizoaffective disorder: bipolar type and a right sided stroke who presented to the inpatient psychiatric hospital involuntarily for acute mania. The patient had been refractory to multiple antipsychotic single agent trials. Dual antipsychotic therapy was used due concerns about poor compliance with clozapine. On day 12 of her hospitalization, she was taking haloperidol and olanzapine. The decision was made to transition haloperidol to chlorpromazine on that same day, and subsequently she received multiple doses of all three antipsychotics throughout that day. The next morning she was found to have a temperature of 34.4 degrees Celsius. Other vital signs remained stable. She also had fluctuating alertness during this time. She was sent to the ED for stabilization. Her hypothermia was initially managed with active re-warming, and subsequently her basal temperature normalized and she returned to the psychiatric hospital that afternoon. Chlorpromazine was withdrawn, and the patient did not have any further recurrence of hypothermia and did not suffer any long term effects.
Discussion:
Antipsychotics have long been known to be associated with malignant hyperthermia. What is less well studied is the process through which antipsychotics induce hypothermia. The

hypothermic effects of antipsychotics are understood as being mediated through the preoptic area of the hypothalamus in animal models. A variety of receptor targets have also been implicated, from serotonin to alpha receptors. A patient may be more at risk for antipsychotic induced hypothermia if they have neurological compromise, which may prevent both autonomic and behavioral responses to temperature changes.
Antipsychotic induced hypothermia tends to occur relatively early after antipsychotic initiation or dose titration. after an antipsychotic is initiated or if the dose is increased. The more likely culprit of the patient's hypothermia based upon the time course is chlorpromazine, as it was initiated the day before. However, the possibility of an additive or synergistic effect from having taken the other antipsychotics cannot be ruled out.
Conclusion
Hypothermia remains a relatively rare but well established adverse event of antipsychotics. Clinicians should be aware that both hyperthermia and hypothermia are possible adverse effects with antipsychotics. The thermoregulatory depressive effects will resolve with the removal of the antipsychotic, and active rewarming measures are adequate for management.

1. Eur J Clin Pharmacol. 2007 June; 63(6): 627–631.
2. J Clin Pharmacol. 2012 Jul;52(7):1090-7.

**NO. 34**

**METHODS AND PROXIMATE CAUSES OF ATTEMPTED SUICIDE AMONG ADOLESCENTS AND YOUNG ADULTS IN TAIWAN FROM 2006 TO 2012**

*Lead Author: Chun-Yuan Chen, M.D.*
*Co-Author(s): Ming-Been Lee, M.D.,1,2, Susan Shur-Fen Gau, M.D., Ph.D.1, Chia-Ming Chang, M.D., Ph.D.3, Shih-Cheng Liao, M.D., Ph.D.1,2*

**SUMMARY:**
Objective: According to data from the national mortality database of Taiwan's Department of Health, suicide rates increased by approximately 50 % among the 15 to 24 year-old age group between the 1990s and the 2010s. The increase was higher for males than females. Suicide become the second leading cause of death among adolescents and young adults – people who are at the beginning of the lives, are mostly educated and have great potential for the future. Rates of suicide by burning charcoal increased sharply while rates of solid/liquid poisoning and hanging decreased. This study examines methods and proximate causes of suicide among adolescents and young adults in Taiwan during a six-years period, as well as the associated psychological distress.
Method: This study uses data from the National Suicide Surveillance System (NSSS) concerning persons aged 24 years and younger. NSSS, launched in 2006, is the first effort in Taiwan universally to register suicide attempts on a national level and to connect at-risk individuals to a structured intervention program. Information about people who attempt suicide includes gender, age, date of attempt, psychiatric history, proximate cause, and method chosen. The surveillance system supports the delivery of aftercare for those who have non-fatally attempted suicide.
Results: The rate of suicide attempts increases with age and that among girls is double that among boys. Among the methods chosen, solid/liquid poisoning and cutting were most used, charcoal burning and jumping from a large height were frequently used, perhaps influenced by the media. Female attempters preferred wrist cutting and poisoning by sedative-hypnotics while males preferred charcoal burning, jumping from a large height and gas poisoning. Problems with romantic relationships was the proximate cause of the highest fraction of attempts, followed by family discord and depressive state. Attempters who were also student were most likely to report psychological distress associated with family discord and school-related difficulties, whereas those who were not students tended to encounter problems associated with marriage issues, loss of job and the obligation to perform military service. NSSS aftercare seemed to reduce the rate of suicide attempts in the three years following intervention but this effect declined over time.
Conclusion: Age and gender are related to the rate of suicide attempts. Puberty may have a negative effect. Females tend to choose less lethal means to commit suicide than males. Adolescents and young adults in school face different forms of psychological distress from those not in school and different resources must be provided to these groups. The NSSS has an effective aftercare protocol that educes the rate of suicide following intervention.

**NO. 35**

**RESULTS OF ANXIETY DISORDER SCREENING PROGRAM AT THE 2013 MENTAL HEALTH EXPOSITION IN SEOUL**

*Lead Author: Kangrok Choi*
*Co-Author(s): Daeho Kim, M.D., Ph.D., Ho Jun Seo, M.D., Ph.D., Hyu Jung Huh, M.D., Dong-Woo Lee, M.D., Ph.D., Jeong Ho Chae, M.D., Ph.D.*

**SUMMARY:**
Objective :Despite the chronic nature and high social costs, individuals with anxiety disorders seldom seek treatment. Thus, education for public awareness and screening for the illness is tremendously important for mental health professionals. This study summaries and presents the results from Anxiety Disorder Screening Program during the Mental Health Exposition held in Seoul in April, 2013.
Methods: We analyzed the data from 116 participants who agreed and completed the screening questionnaires during their visits to two-day Anxiety Disorder Screening Program prepared by the Korean Academy of Anxiety Disorder. The questionnaire comprised of modified Mobility inventory for agoraphobia, Contents of worries, Penn State Worry Questionnaire, Life Events Checklist, and Abbreviated Posttraumatic Stress Disorder Checklist.
Results: Participants demonstrated high rates of anxiety symptoms and possible anxiety disorders. Experience of panic attack was reported by 45%, lifetime and 16% in the past month by respondents. Phobia was reported by 46%. Participants had an average of 3.3 pathological worries and among those, social or interpersonal content was most common(46%). At least one lifetime traumatic event was reported by 64%. By the cut-off scores in the literature, 46% had possible generalized anxiety disorder and 58% possible posttraumatic stress disorder.
Conclusion: Our results suggested that many visitors to Anxiety Disorder Screening Program were in fact treatment seeking after experiencing some forms of anxiety symptoms. Further efforts for delivery of medical information and increasing public awareness for anxiety disorders are needed.

**NO. 36**

**CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) ADHERENCE IN GERIATRIC PATIENTS: PSYCHIATRIC AND PSYCHOSOCIAL FACTORS IN MIND**

*Lead Author: Soojin Chun, M.D., M.Sc.*
*Co-Author(s): Soojin Chun, M.D., M.Sc., Andrew S Wiens, M.D., FRCP(C). William F Pietrcich, M.Sc. ,Roger J Broughton, M.D., FRCP(C)., Elliott K Lee, M.D., FRCP(C)*

**SUMMARY:**
Obstructive sleep apnea (OSA) is a common sleep disorder with significant medical and psychiatric consequences. The prevalence of OSA is high in adults over 60 years old, up to 37.5-62%. The severity of OSA is frequently measured with the Respiratory Disturbance Index (RDI) which is the frequency of sleep disordered breathing events per hour of sleep. Continuous positive airway pressure (CPAP) therapy is an effective first-line treatment in adults with OSA, and has been shown to improve numerous medical and psychiatric conditions, including cognitive function. However, a number of studies have reported that CPAP adherence is a problem in older adults. The main objective of this study is to examine the CPAP adherence in geriatric patients in a mental health hospital and elucidate possible contributing factors to low adherence, including psychiatric and psychosocial factors.
Demographic, baseline polysomnography and CPAP adherence data from 2009-2012 were retrospectively collected for 92 patients, 65 years of age and older. All the study subjects had been referred from the Royal Ottawa Mental Health Centre Sleep Disorders Clinic (Ottawa, ON, Canada) to a local CPAP vendor. Adherence data was downloaded from CPAP machines loaned to patients during their initial 30 day trial. A chart review was conducted to collect information on co-morbid psychiatric diagnosis(es) and living arrangements/marital status. Among 92 patients, 38 patients (41.3%) met criteria for minimal acceptable CPAP adherence (i.e. daily usage of 4 hours or more on 70% of the nights). Preliminary analysis using the Generalized Linear Model for multiple comparisons (gender, mood disorder, anxiety disorder, dementia, living/marital status, baseline RDI) was performed. Analysis revealed a strong trend indicating that elderly patients without dementia are more likely to have a higher CPAP adherence, based on cumulative usage (OR = 2.9, 95% CI 0.069 – 8.787, p = 0.0567) during the 30 day trial. Additionally, there is a statistically significant association between higher baseline RDI and higher CPAP adherence (OR = 1.015, CI 1.001 – 1.030, p = 0.040).
Our study illustrates that geriatric patients with dementia are at risk for low CPAP adherence, and need additional attention and support when CPAP is prescribed by health care providers. Although partner support might play an important role it is not a determining factor in CPAP adherence. Future studies with larger sample sizes are needed to further elucidate CPAP adherence issues in this ever-growing population.

**NO. 37**

**PREDICTORS OF SUICIDAL IDEATION DURING THE POSTPARTUM PERIOD: A LONGITUDINAL, PROSPECTIVE COHORT STUDY**

*Lead Author: Jessica L. Coker, M.D.*
*Co-Author(s): Shanti P. Tripathi, Cynthia A. Fontanella, Ph.D., D. Jeffrey Newport M.D., MS, Zachary N. Stowe, M.D.*

**SUMMARY:**
Importance: Up to three percent of all completed suicides in reproductive age women occur during the first year postpartum. The overall incidence of suicidal behaviors – ideation, attempts, and completion during the peripartum remain obscure. Characterizing the predictors of suicidal behaviors following childbirth serves to enhance screening procedures.
Objectives: To 1) determine the prevalence of suicidal ideation (SI) in postpartum women with neuropsychiatric illness using commonly used depression rating scales, 2) compare individual scale item scores and characteristics of women who screen positive SI, and 3) examine predictors of suicidal ideation on clinician versus patient rated scales based on sociodemographic, obstetrical and neonatal history, and psychiatric history.
Design: Prospective observational study
Setting: Academic women's mental health clinic
Participants: Women participating in a longitudinal observational study of mental illness in pregnancy and postpartum period.
Main Outcomes and Measures: Suicidal ideation was assessed using the Edinburgh Postnatal Depression Scale (EPDS) item 10, Beck Depression Inventory (BDI) item 9, and/or the Hamilton Rating Scale for Depression (HRSD) item 3. By design, any non-negative score on these items was coded as positive. The characteristics of screen-positive women were evaluated including Structured Clinical Interview for DSM-IV (SCID) diagnosis, SCID current mood module, planning of pregnancy, pregnancy complications, delivery complications and breastfeeding to compare women who were more likely to screen positive on a patient rated scales versus clinician rated scale. Other potential predictors of positive suicidal ideation screen were evaluated including current treatment, pregnancy outcome, history of childhood trauma and scores on the Pittsburgh sleep scale, Dyadic Adjustment Scale and Postpartum Support Scale.
Results: Eight hundred forty-two women had completed life time SCID as well as the BDI, HRSD or EPDS during the first 3 months postpartum. SI was identified in 199 (23.6%). Among those screening positive for SI, 132 (16.1%) were positive on the BDI, 129 (22.3%) on the EPDS and 85 (11.5%) on the HRSD. When comparing patient rated scales (BDI and EPDS) to clinician rated scale (HRSD), 13.8% had positive screens on the patient rated scales only and 2.4% on the clinician rated scale only. Alternatively, women who had current depressed mood per SCID mood module were more likely to endorse SI on the clinician rated scale compared to the patient rated scales.
Conclusions : Postpartum women under current treatment for neuropsychiatric illness continue to have high rates of suicidal ideation with sensitivity differing between patient and clinician rated depression scales. Further studies are warranted to understand the association between predictors and the presence of SI in postpartum women.

**NO. 38**

**SLEEP DISTURBANCE AND HYPERTENSION: A REVIEW OF THE RECENT LITERATURE**

*Lead Author: Catarina Cotta*
*Co-Author(s): Vanessa Vila Nova, M.D., Gustavo Jesus, M.D., João Martins, M.D., Diana Durães, M.D., Rui Borralho,M.D.*

**SUMMARY:**
INTRODUCTION
Hypertension and insomnia are very common and often coexist. There is evidence to suggest that the increasing prevalence of arterial hypertension in the past decade might be related both to an increased prevalence of insomnia and to the decline of sleep duration due to modern lifestyle. Decreased melatonin secretion, change in sleep structures, or increased sympathetic nervous system activity was suggested to serve as a pathophysiology for the relationship between sleep disorder and hypertension. High blood pressure, short sleep duration (≤5 h), poor sleep, and insomnia were associated with atherosclerosis risk leading to cardiovascular disease in the elderly.
METODOLODY
Review of the recent literature on insomnia and hypertension, namely pathophysiology for the relationship and therapeutic approach.
CONCLUSIONS
Sleep quality should routinely be assessed. Controlled studies are needed to elucidate confounding factors and the degree to which sleep profiles could augment diagnosis of hypertension and sleep recommendations to prevent or manage hypertension.

**NO. 39**

**MDD WITH PSYCHOTIC FEATURES IN A YOUNG VIETNAMESE-AMERICAN WOMAN: IMPACT OF CULTURE ON SYMPTOM EXPRESSION AND TREATMENT**

*Lead Author: Cyntrell Crawford, M.D., M.P.H.*
*Co-Author(s): Rustin Carter, Elizabeth Nguyen, M.D., Teresa Pigott, M.D.*

**SUMMARY:**
Background: There is a relatively high rate of undiagnosed and untreated psychiatric illness in the Vietnamese American population. Likely due to multiple factors including the language barrier, limited access to care, and culture-specific attitudes. We will provide a brief overview of Vietnamese cultural values and beliefs about psychiatric illness as well as present the case of a Vietnamese-American woman hospitalized for depressive and psychotic symptoms to demonstrate the unique characteristics and challenges encountered by Vietnamese Americans with psychiatric disorders.
Case Report: Miss B was a 33-year old Vietnamese female who was transported by her family to a local ED due to reported aggressive behavior toward her family. The patient was mute in the ER but had bizarre facial grimacing and was severely regressed with a child-like demeanor. She was medically cleared and transferred to an acute psychiatric unit for further evaluation of acute psychosis. Her family reported that prior to her current episode that started 5 years ago she had been living at home with a good job and many friends; she had no history of psychiatric illness or treatment. However, after Ms. B was laid off from her job and also broke-up with her fiancé, she abruptly became withdrawn and isolated from her family and friends. This worsened over the next few years she eventually refused to leave her room or interact with anyone, so her family had to bring necessities directly to her room. 9 months prior to her admission (PTA), Ms. B was seen by her PCP that reportedly prescribed Fluoxetine for depression but the patient stopped taking it after 10 days. 6 months PTA, the patient reportedly stopped speaking altogether and 1-2 weeks PTA she became very agitated, hardly slept or ate, refused to bathe, and aggressive. Ms. B was internally preoccupied and mute at admission with evidence of active hallucinatory behavior and catatonic features. She was started on Olanzapine as an antipsychotic and prescribed lorazepam for her catatonic features. Day 3 she began eating but she remained mute and continued to respond to internal stimuli. Day 7 she began speaking, albeit reticent fashion and completing ADLs independently. Citalopram was added on Day 8 due to her blunted affect and lassitude. Day 12 her appetite and sleep were markedly improved and she began interacting with peers and attending group activities. Her psychotic features resolved Day 15 and her affect brightened and she was communicating well. She was discharged home on Day 17.
Discussion: As illustrated by the delay between the onset and eventual treatment of Ms. B's illness, the traditional role of the family in Vietnamese culture is to assume the burden of care rather than seek professional treatment. In addition, Vietnamese tend to interpret the expression of depression as a sign of immaturity or weakness of character. Ms. B languished with her illness for years until her depression was complicated

**NO. 40**

**DISCLOSURE AND ABUSE OF CONTROLLED SUBSTANCES AMONG PSYCHIATRIC OUTPATIENTS**

*Lead Author: Patricia De Marco Centeno, M.D.*
*Co-Author(s): Mirza S. Baig, M.D., Christianne J. Lane, Ph.D., Sung E. Lee, Ph.D., Isabel T. Lagomasino, M.D., M.S.H.S.*

**SUMMARY:**
Background: Patients often fail to disclose the use of Controlled Substances. As a
result, prescribers and pharmacies may be unaware of potential side effects and
interactions among medications. Objectives: the aims of this study are to determine
patterns of hazardous controlled substance use among psychiatric outpatients and
to raise awareness about the importance of reviewing drug monitoring programs
databases. Methods: 150 outpatient medical records from July 2012 through May
2013 that corresponded to the complete caseload of two providers at our outpatient
psychiatric clinic were reviewed. Patient activity reports were generated from
California's PDMP database. Hazardous patterns of controlled substance use were
identified. Results: Out of 150 patients, 113 (75%) patients were found in the
California's PDMP database . Of these, 78 (69%) had obtained 112 prescriptions
for controlled substances in the past 12 months. Of the 112 prescriptions, 53 (47%)
were not disclosed to the primary psychiatrist, of which 15 (28%) revealed patterns
consistent with abuse. Conclusions: Reviewing PDMPs prior to prescribing
controlled substances should be considered a standard prescribing practice to

prevent abuse, diversion and adverse medical outcomes.

**NO. 41**
**SLEEP LAB REDESIGN: METRICS AND COST CONTAINMENT**
*Lead Author: Jeffrey DeFlavio, B.A.*

SUMMARY:
Sleep medicine is currently experiencing a time of redesign. Often considered a high-profit area of medicine, new technology and insurance regulations have introduced financial pressures. This poster will present the process of expanding the sleep medicine department at Dartmouth-Hitchcock Medical Center in 2012-2913. Utilizing routinely collected data to measure baseline efficiency and productivity, process improvement measures were introduced to improve patient experience. Qualitative and quantitative data was collected to inform a Plan-Do-Study-Act (PDSA) model. Metrics were carefully designed to measure department profits and costs. This poster will present the final results of this departmental analysis, which culminated in expanding the sleep medicine staff in order to meet demand.

**NO. 42**
**STABILITY OF CPK DURING ECT WITH POLYMYOSITIS: CASE REPORT AND REVIEW**
*Lead Author: Benjamin DeLucia, M.D.*
*Co-Author(s): Adeeb Yacoub M.D., Rachit Patel M.D., Andrew Francis M.D., Ph.D.*

**SUMMARY:**
Objective: Report a case and describe the literature on ECT and polymyositis. Background: Muscle diseases including polymyositis (a rare inflammatory myopathy with progressive, symmetric weakness and possible cardiac effects) may add risk to ECT from muscle sensitivity to depolarizing neuromuscular agents or muscle injury during convulsive movements. CPK [serum creatine phosphokinase] provides an index of disease activity in polymyositis. Some reports indicate elevated CPK with ECT in healthy patients, but little is known of CPK during ECT with polymyositis. Method: Case report and literature review using MEDLINE. Results: A 74-year-old female developed initial onset of major depression after steroid treatment for polymyositis. After failed medication trials, she was admitted for ECT. The obtained baseline CPK value was 1301 U/L [normal range 26-174 U/L]. Treatment technique included pre-ECT intravenous hydration, succinylcholine, methohexital and modified bifrontal electrode placement. Depressive symptoms resolved. She had a total of 27 ECT sessions as an inpatient and outpatient over the next 4 years. Each course of treatment was effective for depression without symptoms of muscle disease activity. During this period, there were 3 ECT sessions where pre-, post- and 4-hour post-treatment CPK were measured. CPK levels were 1208, 1194 and 1721 U/L before treatment and 1194, 1123 and 1670 U/L (1%, 17%, and 3% lower) directly after ECT, likely secondary to intravenous hydration. CPK rose 29%, 12%, and 7% from baseline at 4 hrs, and was unrelated to motor or EEG seizure duration. Over the entire treatment period there were 42 CPK measurements [range 786 to 3869 U/L]. The literature review found three prior case series with variable CPK elevation in 12/12, 3/26 and 2/15 patients without muscle disease receiving ECT. Two relevant prior case reports with myositis were noted. One was a 32-year old woman with polymyositis treated with a successful course of ECT using succinylcholine without adverse effects. The second case was a 74-year old man with inclusion-body myositis who received two uneventful and successful ECT courses using mivacurium, a non-depolarizing paralytic agent. Conclusion: The present case and the 2 published cases suggest ECT can be safe and effective in inflammatory muscle disease. Our case also is the first to report extensive CPK monitoring over an extended treatment course of ECT.

**NO. 43**
**SELF-INJURIOUS BEHAVIOR IN BORDERLINE PERSONALITY DISORDER: A TRIAL OF ECT TREATMENT**
*Lead Author: Sanket R. Dhat, M.B.B.S., M.D.*
*Co-Author(s): Santosh Shrestha MD*

**SUMMARY:**
Self-injurious behavior (SIB), Suicidal ideation and MDD are serious and frequent complications in borderline personality disorder (BPD). There is limited research done on the effectiveness of ECT for SIB in BPD. Also the relationship of SIB and MDD in BPD has not been well discussed.
38-year-old female with BPD complicated by comorbid MDD and PTSD, hospitalized in October 2012 due to persistent self-injurious behavior and suicidal ideation. For the last three years, there had been an increase in the frequency and severity of her SIB (head banging, induced vomiting), requiring several lengthy inpatient stays which were characterized by incomplete recovery of her symptoms as well as the lack of long-lasting beneficial effects of treatment. She underwent several failed treatment trials with different antidepressants (SSRI and SNRI), mood-stabilizing agents, typical and atypical antipsychotics, opioid antagonists, sedatives and various psychotherapy modules targeting predominant core symptoms of BPD. As she had failed all these treatment trials, ECT was initiated. By fifth ECT there was a significant decrease in the SIB and her affect was improved however after ninth ECT her SIB relapsed, though her other depressive symptoms continued to improve. Total of twelve ECT treatments were completed. At that time it was felt that the SIB was mostly secondary to BPD/ poor coping skills rather then originating from depression as her depression was significantly improved. Towards the end of hospitalization she seemed to be motivated to work toward getting out of hospital and could control her SIB, which relapsed after the discharge. Trauma, helplessness and PTSD are important components of the pathology of BPD. Optimal treatment of BPD needs to pay specific attention to a subject's current needs, including situational factors, specific psychotherapy combined with pharmacotherapy. As exemplified in our patient, though there might be variations in the clinical outcome of ECT in patients with SIB in BPD, this should not limit the use of ECT for these patients, considering the significant improvement in depressive symptoms. There are few case reports published with significant improvement in SIB after ECT in BPD, it needs more research in future.

**NO. 44**
**CLOZAPINE-INDUCED CARDIOMYOPATHY: A CASE REPORT**
*Lead Author: Aryeh Dienstag, M.D.*
*Co-Author(s): Srinath Gopinath MBBS, Vilayannur Rao MBBS MD*

**SUMMARY:**
Our patient was a male in his late 20s with a history of schizophrenia. He was brought in by EMS to our hospital with a fever, tachycardia, head, neck and chest pain. He became unresponsive in ED and was admitted to the medicine service for a workup of fever of unknown origin. The patient had been started on clozapine 2 weeks prior to admission and had been rapidly titrated up to 250mg daily. Although psychotropics were held on admission they were restarted the next day after the patient showed no signs of NMS or agranulocytosis.
After all investigate procedures (serial CBCs, CXR, blood culture, lumbar puncture, CT head etc.) had been negative. – it was noted that patient was tachycardic and displayed some minor irregularities on EKG, including PVCs and QTc elongations.
Psych CL recommended a cardiology consult be called to evaluate for cardiac pathology and an echocradiorgram showed 15% ejection fraction. The patient was started on ACE inhibitors and beta blockers and clozapine therapy was switched to olanzapine. Subsequent to stopping clozapine, the patient needed to be involuntarily admitted to a psychiatric inpatient unit for a 3 week stay.
Discussion:
A review of the literature examining reports from 1970 to 2004 of cardiac side effects in patients on clozapine concluded that clozapine is associated with a low risk (0.015%–0.188%) of potentially fatal myocarditis or cardiomyopathy (Merrill 2005). Clozapine induced cardiomyopathy is typically of the dilated type and sinus tachycardia may be accompanied by fatigue, dyspnea and tachypnea. EKG are typically non-specific but include T-wave and P-wave abnormalities and left ventricular hypertrophy. A cardiomyopathy is confirmed by an echocardiogram and should lead to prompt discontinuation of clozapine (Nielson 2013).
The leading hypothesis is that of an IgE-mediated hypersensitivity reaction. Supported by observations of peripheral eosinophilia and eosinophilic inclusions within endomyocardial biopsy samples of affected patients, but these findings are inconsistent (Layland 2009). Clozapine related cardiotoxicity remains difficult to diagnosis as many of its manifestations -particularly fever, tachycardia, and fatigue-are common during clozapine titration. Fever occurs in 20% of the patients commencing treatment with clozapine and is considered a “benign, self-limited phenomenon” (Merrill 2006). Although there have been documented case reports of clozapine re-introduction after clozapine induced endocarditis (Manu 2005) – clozapine is generally used with caution /withheld in cases of heart failure (Stahl 2005).
Conclusion:
1) Cardiomyopathy is an insidious but serious complication of clozapine therapy; vigilant observation is necessary to recognize and treat this complication
2) It is important for a consult-liaison psychiatry service to be cognizant of medical complications of psychiatric medications and relay this information to the primary treatment team

**NO. 45**
**REMISSION FROM SEVERE BEHAVIORAL DYSREGULATION IN A CHILD AFTER RECEIVING PROCEDURAL KETAMINE**
*Lead Author: Anna C. Donoghue, B.S.*
*Co-Author(s): Kathryn Cullen, M.D.*

**SUMMARY:**
Background: Ketamine, a N-methyl-D-aspartate (NMDA) type glutamate receptor antagonist, has long been used for anesthesia in children and adults, and has recently been investigated for its rapid antidepressant effects in adults with treatment-resistant depression. This case describes a child with episodes of significant aggression and emotional dysregulation refractory to multiple medical and behavioral interventions, who demonstrated sustained (8-13 days) remission from these symptoms when exposed to ketamine on two different occasions.
Case: The patient is a 7-year-old-boy with a history of frequent (multiple times per day) episodes of severe behavioral outbursts involving destruction of property, physical aggression and emotional dysregulation requiring physical restraints. He has been prescribed many different psychiatric medications for these problems which have had limited efficacy. History is notable for severe abuse and trauma during early childhood, followed by adoption at age 5. In the 2 years following adoption, he required many hospitalizations due to inability to be safe at home, and currently resides in a long-term residential care facility. At the age of 7 the patient underwent surgery for a tonsillectomy and received 10mg of IV ketamine for anesthesia. For 13 days post-op, his aggression dramatically lessened and he exhibited a new-found ability to control his emotions and behavior. Although he still occasionally became upset, he did not escalate in his typical fashion. In addition, he was more affectionate to his adoptive parents. Perhaps the most striking change was that during this time, the patient spoke openly with his therapist about his past trauma and abuse, something he had never done in the past. After 13 days, the patient returned to his baseline behaviors. Three months later, the patient underwent a sedated MRI, and again received 10mg of IV ketamine for the procedure. Once more, during the post-op period, he displayed less aggression and an ability to regulate his emotions, very similar to his response after the first surgery. This time, the remission lasted for 8 days before the baseline symptoms returned.
Discussion: Severe behavioral dysregulation in children and adolescents is often difficult to treat, especially in the setting of a history of significant trauma and abuse. This report suggests that ketamine may be efficacious in treatment of such cases. The mechanism behind our patient’s rapid response and sustained remission for 8-13 days is unclear, however studies investigating the mechanism of action behind ketamine’s acute antidepressant effects show that NMDA antagonists activate a molecular signaling cascade that ultimately results in an increased number of new spine synapses in the prefrontal cortex of animal models. This increased neuroplasticity of the brain may be the mechanism behind our patient’s significant response to each ketamine exposure.

**NO. 46**
**ENEMY AT THE GATE: VOLTAGE-GATED POTASSIUM CHANNEL SYNDROME PRESENTING WITH MANIA**
*Lead Author: Andrew M. Edelstein, M.D.*
*Co-Author(s): Janna S. Gordon-Elliot, M.D.*

**SUMMARY:**
Paraneoplastic syndromes, and specifically limbic encephalitides, have gained increasing recognition as medical mimics of

primary psychiatric disorder. While mania has been reported in similar syndromes, mania has never been documented in voltage-gated potassium channel (VGKC) syndrome, with limited information on time course of symptoms.
Case report: An 82 year-old male with no prior psychiatric or significant medical history, presented with cognitive decline over the course of a year, including short-term memory deficits, with mild apraxia. Within two months, he demonstrated behavioral disturbances and mania: he slept 2-4 hours per night, with increased goal-directed activity, circumstantial speech, irritability and expansive moods, as well as disinhibition. Montreal Cogntiive Assessment score was 25/30. He developed brachiofacial dystonia lasting one minute with brief periods of obtundation. These occurred with increasing frequency, up to 2-3 times a day, with worsening behavioral dysregulation. Psychiatric admission followed, with stabilization on risperidone 1mg BID. Outpatient follow-up with continuous electroencephalogram was unremarkable, although cerebrospinal fluid analysis showed an anti-VGKC titer of 646 (normal <84). Positron emission tomography showed a fluoro-2-deoxy-D-glucose-avid lesion on the right upper lobe of his lung, revealed to be Stage 1A lung adenocarcinoma on biopsy. Of interest, brain PET scan demonstrated increased metabolism in the basal ganglia. Patient was initially treated with high dose steroids (methylprednisone 1g IV x 5 days, followed by prednisone 60mg PO taper), improving his motor symptoms, although worsening his mania. Second hospital admission to the neurology service involved rapid steroid taper, tumor resection and IVIG administration. He remained circumstantial, grandiose, with limited insight, although more manageable for family.
Discussion: Previously described behavioral symptoms of VGKC include apathy and irritability. Literature search revealed no evidence of primary manic symptoms associated with disease. This case suggests a time course involving cognitive impairment followed by mania then motor disturbance. Much of the pathophysiology remains unknown autoimmune response is occurring in the peripheral versus central nervous system. In this case, a rapid resolution of the peripheral neurological symptoms was seen, with residual neuropsychiatric. This supports the theory that there may be at least two pathological processes co-occurring, with the central process – the presumed limbic encephalitis – being less treatment-responsive than the peripheral.
Conclusion: VGKC syndrome should be on the differential for patients with sudden onset of psychiatric symptoms (mania), cognitive impairment and dyskinesias. Not only is the condition highly susceptible to immunomodulation, it can be the harbinger symptom leading to diagnosis malignancies while they are at treatable stage.

**NO. 47**

**NEW ONSET PSYCHOSIS IN DARIER'S DISEASE TREATED WITH ACITRETIN**

*Lead Author: Nadia M. El Fangary, M.D.*
*Co-Author(s): Mona M. El Fangary M.D., Teresa A. Pigott, M.D.*

**SUMMARY:**

Background: Darier's Disease is a rare skin disorder characterized by keratotic papules, nail abnormalities and palmer pits. Acitretin and other oral retinoids are considered the most efficacious treatment for Darier's Disease, but they have been associated with psychiatric side effects including depression, psychosis and suicidal ideation. We report a case of a white female with Darier's Disease that developed recurrent episodes of psychosis while being treated with Acitretin.
Case Report: Ms. C was a 38 year old white widowed female admitted to a psychiatric unit for acute psychosis with agitation,mood lability, paranoid delusions, and a disorganized thought process which had emerged over the preceding 3 days. Her medical history was significant for Darier's Disease with recurrent flare-ups of skin lesions that required multiple skin graft procedures. Her psychiatric history was significant for a previous hospitalization at age 14 for Major Depressive Disorder (MDD) and a 2nd hospitalization at age 35 for recurrence of MDD and Opiate Dependence that developed in the context of the death of her husband. She was successfully treated at that time and had been off psychotropic medication for the next 2 years. She had been living in Africa for the past year, but had recently returned to the United States in part because she had experienced inexplicable episodes of acute psychosis that had resulted in brief 1-2 day hospitalizations. Ms. C responded well to a regimen of low dose haloperidol and lorazepam during her admissions in Africa with resolution of her symptoms. She was not discharged on any medication. During the current admission, she was treated with Risperidone 3 mg/day in addition to the Acitretin 10 mg/day for her Darier's Disease. Further investigation revealed that Ms C. had been started on a new medication, Acitretin for her Darier's Disease 6 months ago. Despite the likely role of Acitretin in the emergence of her recurrent psychotic episodes, she was unwilling to stop Acitretin because it had proven to be the most effective agent for her Darier's Disease. Therefore she was continued on the Acitretin along with the Risperidone and her mood lability and psychotic symptoms remitted over the next week. She was subsequently discharged with the recommendation that she continue on the Risperidone as long as she was on Acitretin.
Discussion: While Acitretin was considered to have a major role in Mrs. C's subsequent recurrent psychotic episodes, other factors such as her previous history of MDD also likely contributed. While psychiatric side effects are generally considered rare, patients with a past history of mood disorders appear to be at an increased risk for developing mood and psychotic symptoms during retinoid use.
Conclusion: The increasing use of oral retinoids in a wide range of dermatological conditions increases the importance of monitoring for potential psychiatric side effects in patients known to be susceptible.

**NO. 48**

**BETA HCG DIET AND ANXIETY**

*Lead Author: Rasha Elkady, M.D.*
*Co-Author(s): Balkozar Adam,M.D,Emaya Anbalagan,M.D., Gaurav Kulkarni,M.D*

**SUMMARY:**

Introduction:
Dieting fads are common with the widespread prevalence of obesity. The undue importance placed on body image leads to extreme willingness among people to try anything to achieve that. Introduced in 1950's, the Beta human Chorionic Gonadotropin (β-hCG) diet is one such dieting fad consisting of daily intramuscular injections of 125 mg of β-hCG, six times a week,

for a total of 40 injections, accompanied by a 500 calorie diet given in two meals a day. The injection claims to cause the body to preferably burn fat stored in the stomach, hips and thighs.
The following is the case of a patient who presented with worsening anxiety resistant to multiple medications after starting on β-hCG injections.
Case Presentation:
The patient is a 35 years old white female with a history of anxiety disorder not otherwise specified and adult onset attention deficit hyperactive disorder whose anxiety had been controlled until six months previously She presented with excessive worrying, restlessness, continuous fidgeting, easy fatigability, thought blocking, difficulty staying asleep and reported that her "mind goes blank" several times during the day. Her anxiety was so bad that she could not keep track of things and had ended up paying bills several times. No other symptoms of mania, depression or psychosis were reported. She was on sertraline, the dose was gradually titrated to 200 mg and she was started on buspirone 10 mg three times a day which had a minimal positive effect on her anxiety. Collateral from her husband during a follow up revealed, "She was fine until she started that β-hCG diet". Until then, the patient had never disclosed that she was on this diet even though she had been asked dietary questions. She was losing weight on the diet and had some initial resistance, but agreed to try stopping the β-hCG injections. A follow up appointment revealed a significant improvement in her anxiety symptoms.
Discussion:
Literature reviews regarding the relationship between anxiety depression and β-hCG are limited.
No well-designed study has been conducted to assess the psychological effects of the β-hCG diet. At higher doses, it can cause headaches, restlessness, depression, fatigue. A 500 calorie starvation diet is not physiological. One article reported deep vein thrombosis and pulmonary embolisms. Frank Greenway et al performed a double-blind randomized study in 1997 using β-hCG injections or placebo where they assessed mood changes in subjects using the Multiple Affect Adjective Checklist which rates anxiety, hostility and depression. Twenty patients were enrolled in each group and the only significant difference between the two groups was on the Anxiety scale where patients receiving β-hCG were more anxious. This report brings to light the limited data available on the side effects of β-hCG diet and its safety and emphasizes the need for more investigation in this area.

**NO. 49**

**ANTIPSYCHOTIC MEDICATION DOSE IN SCHIZOPHRENIA AND SCHIZOAFFECTIVE DISORDER FOR PATIENTS WITH POSITIVE VERSUS NEGATIVE CANNABIS URINE TEST**

*Lead Author: Rania M. Elkhatib, M.D., M.P.S.*
*Co-Author(s): Wilma Burns, MSc, Iyke Ngana, M.D., Olaoluwa Okusaga, M.D., Mohite Satyajit, M.D.*

**SUMMARY:**

Background: Cannabis use has been associated with increased risk of psychosis but information on the impact of cannabis on doses of antipsychotic medication in schizophrenia and schizoaffective disorder patients is sparse. We have now tested the hypothesis that cannabis-abusing schizophrenia and schizoaffective disorder patients will require higher doses of antipsychotic medication in comparison to nonabusing patients.
Methods: We included all psychiatric admissions of patients with a primary discharge diagnosis of either schizophrenia or schizoaffective disorder between January 2008 and December 2012. T-test and linear regression were used to compare doses of discharge antipsychotic medication (in chlorpromazine equivalents) between patients with urine drug screen (UDS) positive for cannabis [N= 881; age 30.2 ± 9.5; males 82.2%] and those with negative UDS [N= 5800; age 38.8 ± 12.5; males 67.8%].
Results: From unadjusted analysis, geometric mean dose of antipsychotic medication at discharge was higher in patients with UDS negative for cannabis compared to those with UDS positive for cannabis (14.45 ± 1.41 vs. 13.74 ± 1.42, $p < 0.0001$). However, after adjusting for confounders mean dose of discharge antipsychotic medication did not differ between the 2 groups ($p= 0.833$).
Conclusions: Our study is limited by the unavailability of information on the quantity of cannabis smoked, duration of use, and patients were not diagnosed with the Structured Clinical Interview for DSM (SCID). These limitations notwithstanding, our findings suggests that cannabis use in schizophrenia and schizoaffective disorder patients is not associated with a requirement for higher doses of antipsychotic medication as we had hypothesized.

**NO. 50**

**A CASE REPORT ON AN UNUSUAL PRESENTATION OF CONVERSION DISORDER: PSYCHOGENIC MOVEMENT DISORDER PRESENTING AS ASTASIA-ABASIA**

*Lead Author: Shama Faheem, M.B.B.S., M.D.*
*Co-Author(s): Taranjeet Jolly, M.D., Nabila Farooq, M.D., Pankaj Lamba, M.D., Punitha Vijayakumar, M.D.*

**SUMMARY:**

Introduction: Astasia-abasia, refers to the inability to stand (astasia) or walk (abasia) normally despite possessing good motor strength and conserved voluntary coordination. Although usually regarded as a psychogenic disorder, rarely organic causes have been reported. The psychiatric diagnosis varies; most cases are of conversion disorders, in which the problem is unconscious but infrequently, some are factitious disorders or malingering.
Case Report: A 45-year-old Caucasian female admitted to psychiatric inpatient, reported gait problem. She would start running while walking normally and was not able to stop herself. Patient reported she has had these running spells 4-5 times over the last month. She reported inability to maintain her balance and would eventually fall. She was transferred to mental health unit after a suicide attempt on the medical floor where she was admitted due to sudden onset of numbness and hemiparesis of the right half of her body. This was her second admission to medicine; last one was due to seizure-like activity, which was diagnosed to be non-epileptic. In addition, patient had hypothyroidism and substance abuse problem. Her current psychosocial stressors included death of the boy-friend a few days before her previous admission.
Patient's neurological exams and EEG were normal. Her basic metabolic panel including electrolytes and glucose as well as her postictal prolactin and lactic acid levels were within normal

range. MRI of brain suggested a possibility of low grade glioma over the left motor cortex which had not increased over several years. Neurologist did not think that it contributed to any of patient's symptoms. Patient's hemiparesis, numbness waxed and waned and she continued to have non-epileptic spells during her stay in the hospital.
Discussion: Psychogenic movement disorder (PMD) is a clinical syndrome defined as the occurrence of abnormal movements that result from a psychiatric cause rather than a general medical or neurologic cause. Psychogenic gait is a form of PMD and is a somewhat unusual presentation of conversion disorder. Patient's description of gait did not conform to any of the usual gaits observed with neurological disorders and thus, classified as Astasia-Abasia. The patient presented as a dilemma to both neurologist and psychiatrist. Her acute onset with spontaneous improvement suggested the etiology as conversion disorder, though organic lesion located over the left motor cortex could not be completely ruled out as an etiology. The coincidence of stressors is also an important consideration indicating psychosomatic nature of the illness. However, before making this diagnosis it is imperative to do a thorough examination and rule out any substance abuse, organic brain disease or any secondary gains. This case-report demonstrates the complexity of presentation and diagnostic challenges when diagnosing conversion disorder and thus, encourages us to learn and better understand them.

**NO. 51**
**TOXIC EPIDERMAL NECROLYSIS CAUSED BY LAMOTRIGINE: HOW TO COUNSEL PATIENTS ABOUT RISK**
*Lead Author: Suzanna Freerksen, M.D.*
*Co-Author(s): Erica Fasano, M.D., Severin Grenoble, M.D.*

**SUMMARY:**
Due to the risk of Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN), psychiatrists should use caution when prescribing lamotrigine to treat depression. However, the literature shows greater risk of SJS/TEN with penicillins, sulfonamides, oxicam NSAIDs, allopurinol and carbamazepine than with lamotrigine. While there is a significant risk of mortality in cases of SJS/TEN, the actual incidence of SJS/TEN as a result of lamotrigine exposure is extremely low with estimates between 2.6 to 7.1 cases per million population per year. Certain demographic factors such as age, ethnicity (e.g., whites, Asians), specific human leukocyte antigen (HLA) types (e.g., B*1502, B*44 alleles) and those who are immunocompromised (e.g., infected with HIV) have a greater risk of developing SJS/TEN with the use of lamotrigine.
In this case study, we present a middle-aged African American female with bipolar disorder who developed TEN after starting the standardized titration of lamotrigine at 25 mg per day. She was discharged from a psychiatric hospital after a mixed episode of bipolar depression on newly started lamotrigine as well as lithium. Several days after her discharge and less than two weeks into her lamotrigine treatment, she developed flu-like symptoms, including headache, malaise and myalgia along with temperatures up to 104° Fahrenheit. Due to the severity of her condition, she required admission to a burn unit in a tertiary hospital. The rash began in her scalp as severe irritation/burning, and then as symmetric lesions on her face with mucosal involvement of her eyes, mouth and throat requiring intubation. It then rapidly progressed in a distal fashion to cover eventually her entire torso, extremities, palms and soles. The rash manifested itself in the classic form of small vesicles and bullae followed by severe excoriation. At its peak, the rash covered over 30% of her total body surface area (TBSA) which is consistent with TEN criteria, as compared to SJS with less than 10% TBSA involvement.
In TEN, mortality can vary widely anywhere from 3.2% to 50% or even higher in some reports depending on comorbidities, multi-organ failure, and sepsis. Early supportive treatment is likely to improve outcomes in SJS/TEN, though there is evidence that once the inflammatory cascade has started, discontinuing the offending drug is not sufficient to halt the disease process. This case had a positive outcome, as the woman involved lived with only modest scarring at several months. At the time of discharge from the burn unit, she had no ophthalmic problems and did not suffer from cellulitis. Both psychiatrists and primary care providers alike should discuss the potential risk of SJS/TEN to the extent needed for a better informed consent process when prescribing lamotrigine, a drug with perhaps the greatest efficacy in bipolar depression. This case study walks physicians through those steps.

**NO. 52**
**PREVENTING MEDICALLY UNNECESSARY INTERVENTION: A CASE OF CONVERSION DISORDER**
*Lead Author: Liberty Fritzler, M.B.A., M.D.*

**SUMMARY:**
Background: Conversion disorder affects voluntary motor or sensory function; however, objective clinical findings are incompatible with the symptoms. These symptoms cause impairment in social or occupational functioning. The incidence of individual conversion symptoms is estimated at 2-5/100,000. Contributing factors may include childhood abuse, neglect, and stressful life events.
Method: We describe a case of conversion disorder, and present the treatment outcome as a result of collaborative care rendered by various subspecialties.
Result: The patient is a 20 year-old female who presented to the outpatient resident psychiatry clinic upon referral from her rheumatologist. On initial interview, the patient reported severe right knee pain, which she described as "20/10"; however, she appeared relaxed and calm. She wore a knee brace and used crutches to walk, even though she was advised by athletic medicine to stop using them. A recent knee MRI report was notable for stating "unremarkable" in the findings. In the past 6 months she was seen by various services including internal medicine, rheumatology, athletic medicine, orthopedic surgery, and physical therapy. The patient was scheduled for exploratory surgery. At a follow up appointment, the patient described her knee pain as "30/10" with la belle indifference. Our clinical findings were shared and discussed with other treatment providers and subsequently the treatment team encouraged the patient to initiate psychotherapy and her knee surgery was cancelled.
Conclusion: The diagnosis of conversion disorder requires a thorough workup for medical or neurological causes for the stated deficits. Appropriate management requires collaboration between medical, surgical and psychiatric providers.

**NO. 53**

**CLOZAPINE TITRATION IN SMOKING PATIENTS WITH SCHIZOPHRENIA ADMITTED TO "SMOKE-FREE" PSYCHIATRIC UNITS: A CHALLENGING TREND**

*Lead Author: Tanuja Gandhi, M.D.*
*Co-Author(s): Dr. Carolina I. Retamero, M.D.*

**SUMMARY:**
Introduction:

Clozapine, an atypical antipsychotic is metabolized to a great extent by cytochrome P450 enzyme, CYP1A2. Cigarette smoke, a potential inducer of hepatic CYP1A2 activity, results in significantly lower serum clozapine concentrations in smokers in comparison to non-smokers. It is well documented in literature that for a given dose, smokers may have about 40% to 50% lower serum levels of Clozapine when compared to non-smokers. This is particularly of significance in the light of recent smoking bans in inpatient psychiatric units, which mandates closer drug monitoring and essentially, monitoring serum levels on discharge as well.
We present cases of 2 patients on clozapine who had severe psychiatric decompensation after being discharged from non-smoking facilities despite medication adherence. Case1 is of a 56yr old male who was started on Clozapine in a non-smoking inpatient unit who resumed smoking after discharge and refused follow-up clozapine levels for dose adjustment resulting in decompensation despite adherence to medications. Case 2 is of a 48yr old female with schizophrenia who abruptly stopped smoking after being admitted to the medical floor for COPD exacerbation. On the medical floor she developed anticholinergic toxicity probably related to a dose of 600mg/day of clozapine. Patient's clozapine dose was reduced to half and patient was discharged after improvement of her symptoms. Once she resumed smoking, she decompensated psychiatrically warranting inpatient hospitalization.
Method:
We performed a retrospective review of the patient's charts in addition to a pub med search using the keywords clozapine & smoking.
Discussion:
As many inpatient psychiatric units have smoking restrictions, monitoring therapeutic doses & serum levels of atypical antipsychotics such as clozapine can be challenging, as the patient may reach toxic serum levels on smoke cessation while resumption would require readjustment of the effective dose. In Case 1, we anticipated that the serum clozapine levels would be lower due to resumption of heavy smoking, hence reiterating that its essential to closely monitor patients on clozapine even after discharge. However, in Case2 patient's initial contact with non-psychiatric providers added extra challenges.
Conclusion:
There is very scarce literature on the subject and no specific guidelines have been created regarding benefits of nicotine supplementation in non-smoking facilities and correlation with clozapine levels.
Physicians need to be aware of this trending problem as more hospitals go "smoke free" and adequate psycho-education and follow-up needs to be provided.

**NO. 54**

**IMPLICATIONS OF REPETITIVE, MILD TRAUMATIC BRAIN INJURY IN THE SETTING OF INTIMATE PARTNER VIOLENCE: A CASE REPORT AND LITERATURE REVIEW.**

*Lead Author: Renee M. Garcia, M.D.*
*Co-Author(s): David Baron, DO*

**SUMMARY:**
Mild traumatic brain injury (mTBI) is a common occurrence in the setting of intimate partner violence (IPV), but frequently goes unrecognized and undiagnosed by both victim and many medical professionals. TBI has been identified as significant public health concern with approximately 1-2 million Americans suffering from TBI every year thus leaving over 5 million Americans with long-term disability as a result. Most TBIs, however, do not result in prolonged disability as approximately 80% of TBIs are classified as mild in severity. MTBI awareness has increased recently due to the recent Iraq and Afghanistan wars with as many as 15% of soldiers sustaining mTBI, as well as the recognition, conceptualization, and definition of chronic traumatic encephalopathy (CTE) in athletes with repetitive concussions and/or brain trauma. Despite this increased awareness, there has been little research conducted on the impact of head injury the in the vulnerable population of IPV victims who have likely sustained injuries to the head, neck or face repetitively over extended duration of time. The clinical case of Mrs. R is presented here as an example of the complex issues surrounding these sensitive situations and the potential future sequelae of repeated concussive and subconcussive injuries these individuals sustain. The review of current literature directly relating to mTBI's in the setting of IPV was conducted via PubMed search using relevant keywords for the purpose of identifying data on prevalence, patient identification/screening, diagnosis, any available treatment algorithms and treatment recommendations.

**NO. 55**

**NEUROPSYCHOLOGICAL FUNCTION AND PREDICTORS OF COGNITIVE IMPAIRMENT IN GERIATRIC MOOD DISORDERS**

*Lead Author: Jennifer R. Gatchel, M.D., Ph.D.*
*Co-Author(s): Brent Forester, M.D., David Harper, Ph.D. , Brittany Jordan-Arthur, B.A., Kathryn E. Lewandowski, Ph.D., Cara F. McCabe, B.A.*

**SUMMARY:**
Older adults with major depressive disorder and bipolar disorder experience cognitive deficits in memory, attention, executive functioning and processing speed. However, findings regarding the nature of cognitive deficits between these diagnostic groups as well as between phases of illness and through illness progression remain inconsistent. In addition, the associations between cognitive deficits and gender and medical co-morbidity remain unclear. To test the hypothesis that gender and medical co-morbidity give rise to differential cognitive deficits in older adults with major depressive disorder vs. bipolar illness, we examined 119 older adults with mood disorders (major depression (MDD) or bipolar disorder (BPAD) (n=47 MDD and n=72 BPAD (n=61 males and 52 females; mean age 67.4 years)) and 45 healthy controls (n= 28 males and 16 females, mean age 65.4 years). Patients were recruited through referrals from McLean Hospital geriatric inpatient and outpatient programs as well as from the Harvard Division on Aging

and advertisements in the Boston area. Mood state was evaluated using several assessments, including the Montgomery-Asberg Depression Rating Scale, Hamilton Depression Rating Scale 17 item, and the Geriatric Depression Scale-Short Form. Cognitive performance was evaluated using a number of neuropsychological measures including scales from the Consortium to Establish a Registry for Alzheimer's Disease Clinical and Neuropsychology (CERAD) as well as the Wisconsin Card Sorting Test (WCST), Trails A and B and the Stroop Color and Word Task. The Clinical Illness Rating Scale (Geriatric) (CIRS(G)) was used to assess medical co-morbidity and the Wechsler Abbreviated Scale of Intelligence (WASI) was used to measure intellectual functioning. Based on preliminary results, older adults with mood disorders performed worse than healthy controls on most neuropsychological measures, including Trials A and B, WCST, CERAD and the MMSE, but did not differ from each other based on diagnosis (MDD vs. BPAD). Executive functioning and verbal memory deficits remained significantly different between patients and controls after adjusting for IQ. Ongoing work examining the relationships between gender and medical co-morbidity and cognitive performance promises to shed further light on the development and course of psychopathology, and has implications for clinical management and therapeutic intervention for older adults with mood disorders.

**NO. 56**

**FACTORS AFFECTING TREATMENT OUTCOMES AND CHALLENGES OF TREATING ILLICIT DRUG USERS AT SENIOR RECOVERY TRACK: CASE SERIES AND LITERATURE REVIEW**

*Lead Author: Gibson T. George, M.B.B.S.*
*Co-Author(s): Padmapriya Musunuri M.D., Carolina Retamero M.D., Marc Zisselman M.D.*

**SUMMARY:**

Background/introduction

Substance dependence has been identified as a growing problem among older adults. It is estimated that the prevalence of illicit drug use in Americans above 50 years of age will increase from 1.6 million to 3.5 million, However, little has been published about illicit drug use prevalence and available treatment options in this population. The Senior Recovery Track, part of the Community Outpatient Program for the Elderly in Philadelphia, is designed for older adults with alcohol or drug dependency problems. At this time, this is the only dedicated outpatient recovery track for seniors in the region. The authors present a series of challenging cases of elderly patients using illicit drugs with descriptive findings of epidemiology, treatment modalities and outcomes.

Method

A PubMed and Medline literature search was conducted using the search terms - addictions, substance dependence or abuse, substance disorders, illicit drugs, geriatric and elderly. The authors conducted a retrospective chart review of 116 patients who were treated at the Senior Recovery Track and identified five patients who were diagnosed with dependence on illicit drugs with or without dependence on other substances including alcohol. These five charts were reviewed in detail for demographics, substance use, medical co-morbidities, social factors, diagnoses, modality of treatment, compliance, treatment outcome and follow up. The authors reviewed the treatment outcomes of these five patients and the factors that may have affected the treatment outcomes.

Results

All the five selected patients were diagnosed with illicit drug dependence with or without alcohol or other substance use. These five patients were treated in the mental health services for extended period of time before the substance dependence issues were identified and diagnosed. Marijuana and cocaine were the commonly used illicit drugs in these patients. All of them had a concomitant mood or psychotic disorder with multiple co-morbid medical conditions. The treatment was individualized to each patient; however, all the patients received weekly group therapy and engaged in 12-step program. Patients also received individual therapy and family therapy as clinically indicated. These patients had different outcomes of treatment ranging from complete remission to death secondary to medical complications.

Conclusion

The aging baby-boom cohort will place increasing demands on the substance dependence treatment system in the next several years, requiring a shift in focus in order to address the special needs of an older population of substance users. There is also a need to develop improved diagnostic criteria and assessment tools for measuring substance use and among older adults. Due to their unique physical, emotional, and cognitive changes and their shrinking social support, the treatment of disorders of drug use problems in the elderly requires different treatment strategies.

**NO. 57**

**CAUSATION INSTEAD OF COMPLICATION: HYPERNATREMIA PRESENTING WITH CATATONIA IN AN ELDERLY PATIENT**

*Lead Author: Justin A. Gerstner, M.D.*
*Co-Author(s): Brian Mendenhall, D.O.*
*Art Walaszek, M.D.*

**SUMMARY:**

Background: Catatonia is defined as a clinical syndrome marked by at least 3 of 12 psychomotor symptoms outlined in the DSM-5. Its primary clinical feature is a marked psychomotor disturbance with symptoms ranging from stupor to agitation. There is an increased risk for patients with mood disorders and with increased age, increased frequency of depressive episodes, and more severe cognitive impairment to develop catatonia. Hypernatremia is a common electrolyte disorder defined by a serum sodium concentration exceeding 145 mmol per liter. The young, the elderly, and hospitalized patients are at increased risk. Catatonia due to a medical condition has been described in a number of metabolic disturbances but is infrequently seen due to hypernatremia. To our knowledge there is only one previous case report.

Case: We present a case of a 87 year old female who was hospitalized due to failure to thrive. This patient had a history of depression with catatonia and dementia. Her past medical history included heart failure, DVT, tremor, and hypertension. At initial presentation the patient was mute, stuporous, grimacing, and at times would posture. During initial workup she was found to have a serum sodium of 155 mmol/L and a prolonged QTc of 508ms. Her home medications included 0.5mg lorazepam twice daily with another 0.5mg as needed for anxiety as well as 20mg escitalopram daily. Lorazepam was initially held given mental status and escitalopram was reduced to 10mg daily due

to the prolonged QTc. Over the course of the next 24 hours she remained mute and only occasionally followed commands. She was started on a ¼ normal saline infusion to correct the hypernatremia. At 23 hours her sodium level was 147 mmol/L, at 53 hours it was 142 mmol/L, and at 75 hours it was 139 mmol/L. Her mental status rapidly improved over days 2 and 3 and by day three she showed no signs of catatonia. She was alert, conversant, following commands, and interactive with staff and her family. Not until day 3 was lorazepam restarted at 0.5mg three times daily and then later reduced to 0.25mg twice daily by discharge. Escitalopram was discontinued and mirtazapine was started at 15mg nightly. Her mental status remained significantly improved from admission until discharge at day 7.
Discussion: Catatonia and hypernatremia are common conditions in elderly females who have baseline loss of cognitive function. There are numerous reports of malnourishment, dehydration and hypernatremia arising as a complication of catatonia. However, it is infrequently described that hypernatremia is the primary contributor to a catatonic state. This patient presents a complicated history and thus other confounding factors cannot be ruled out. The resolution of catatonic symptoms concomitant to the treatment of hypernatremia present a compelling case for a causal relationship.

**NO. 58**
**CATATONIA: COMPLICATIONS AND A POSSIBLE RHEUMATOLOGIC ETIOLOGY**
*Lead Author: Hunter M. Gibbs, M.D.*
*Co-Author(s): Shona Ray, M.D.*

**SUMMARY:**
The following case study examines the hospital course, work-up, and tentative improvement of a geriatric male patient admitted to an inpatient service with severe catatonic features and an unknown diagnosis. This case unfortunately featured a wide range of typical and atypical complications facing catatonic patients including venous thrombosis, pneumonia, urinary tract infection, and cardiovascular arrhythmias. Of note, the medical history was significant for autoimmune disease (rheumatoid arthritis) and chronic infection with hepatitis C virus. Retrospectively, this case represents an excellent potential collaboration point between psychiatry and rheumatology. A review of the literature reveals an abundance of data linking autoimmune disease and psychiatric aberration (Benros, et al, Biological Psychiatry, 2013; Coutinho, et al, Biological Psychiatry, 2013), however there is a paucity of reports addressing the relationship between neither rheumatoid arthritis and catatonia nor hepatitis C and catatonia. A recent study published October 2013 in Annals of Rheumatic Diseases by Dougados, et al, reports a significant association between rheumatoid arthritis and depression. Given recent advances exploring the link between inflammatory conditions and depressive behavior, it is plausible to suggest that severe inflammation could result in catatonia when viewed as a severe presentation of depression. To follow is a presentation of complications commonly encountered in a catatonic patient as well as a discussion of the data suggesting a potential rheumatologic etiology.

**NO. 59**
**CHARACTERISTICS OF SUBSTANCE USE PATIENTS IN AN INNER CITY PSYCHIATRIC INPATIENT UNIT: CHART REVIEW**
*Lead Author: John A. Gillean, M.D.*
*Co-Author(s): Pedro Bauza, M.D., Wei Du, M.D., Samson Gurmu, M.D., Donald Kushon, M.D., Gaurav Mathur, M.D., Nivedita Mathur, M.D., MRCPsych, Olufemi Ogundeji, M.D., Elif Yilmaz, M.D.*

**SUMMARY:**
Substance abuse is a major public health problem that affects a large number of psychiatric patients. During the last decade, the number of patients treated for substance abuse-related problems in the United State has grown steadily. We present a chart review involving all patients with positive urine drug screens admitted to an inner city psychiatry inpatient unit during a 3-month period. An attempt was made to look at different characteristics of these patients and to detect any patterns in outcomes such as length of hospital stay, the most common substances used, along with the most common Axis I, Axis II and Axis III diagnoses in this group of patients.

**NO. 60**
**TURNING NIGHT INTO DAY: TO SHOWCASE THE USE OF PSYCHOSTIMULANTS IN TREATING OBSTRUCTIVE SLEEP APNEA (OSA) COMORBID WITH DEPRESSION**
*Lead Author: Yazhini Gnanasambanthan, M.B.B.S.*
*Co-Author(s): Abner O. Rayapati, M.D., M.P.H.*

**SUMMARY:**
Purpose:
To showcase the use of psychostimulants in treating obstructive sleep apnea (OSA) co-morbid with depression.
Background:
Depression is common in OSA and manifests as fatigue/apathy. This can impair cognitive functioning and warrants immediate attention when it impairs treatment compliance, in an acute medical setting.
Case Report:
68/M with a history of Depression, Diabetes Mellitus, Chronic Renal Failure, Congestive Cardiac Failure, Hypertension, Hyperlipidemia, Peripheral Neuropathy, OSA and morbid obesity was admitted after a suicide attempt.
Recently, the patient had a fall, was immobile and was admitted to another hospital where he was recommended long-term rehabilitation. The patient left against medical advice and attempted suicide after reaching home, following which he was admitted to our facility. The patient had no past psychiatric hospitalization or suicide attempts. He had a very supportive family, who described the patient as a well respected man in the community. Patient was a high-functioning individual and owned a construction business.
Hospital Course: The patient denied suicidal ideation from day 2 of hospitalization and mentioned positive factors for staying alive. He had been treated with Citalopram 40mg for the past 15 years, refused any change to his antidepressant, and denied depression. However, he exhibited apathy, refused treatment options, including rehabilitation. On day 6, he was started on Methylphenidate 5mg, twice a day. On day 7, he reported increased energy and motivation, improvement in his sleep, and improved ability to move his extremities, which his wife described as “night vs day”. He consented for medical treatment, including rehabilitation, continued to improve and stayed very motivated.

Discussion:
Fatigue and depression have a positive association in several chronic illnesses, including obstructive sleep apnea (OSA), suggesting a common neurobiological etiology and scope for clinical intervention (Bardwell, 2003). Hypoperfusion in the prefrontal areas has been demonstrated in both (Machale, 2000) with shared symptoms of cognitive dysfunction and apathy leading to impaired functioning (Stahl, 2003). Severely medically ill patients are thought to have a high incidence of depressive disorders (Goldman & Kimball, 1987) which has implications in those that refuse to participate in treatment. The use of psychostimulants in treating fatigue and depression in medically sick individuals has shown promise due to its rapid response, sustained efficacy and limited side effect profile (Stahl, 2003, RAND, 2000, Woods, 1986). In OSA, CPAP alone does not appear to improve mood symptoms except those with severe depression (Yu, 1999) with fatigue being attributed to depression more than symptom severity of OSA (Bardwell, 2003).

**NO. 61**

**ARIPIPRAZOLE-INDUCED MANIC EPISODE**

*Lead Author: Sundar Gnanavel*
*Co-Author(s): Mamta Sood M.D., Sudhir K Khandelwal M.D.*

**SUMMARY:**

Background
Aripiprazole is a new generation antipsychotic medication that is used to treat a number of psychiatric conditions, including schizophrenia, bipolar disorder and schizoaffective disorder. While aripiprazole is indicated for treatment in the above conditions, we here report a case of aripiprazole induced manic episode in a patient with schizoaffective disorder.
Case presentation
A 20 year old Indian male, with a 7 year old history of schizoaffective disorder presented to us with an exacerbation of psychotic symptoms for the past 1 month. He was earlier maintaining well on olanzapine along with lithium for the previous 2 years. Hence, olanzapine was tapered off and the patient was started on aripiprazole. After a brief period of improvement for a few days, the patient developed a manic episode within a week of initiating aripiprazole. This required gradual tapering off aripiprazole and introduction of risperidone as an antipsychotic. This was followed by resolution of manic episode within 10 days of completely tapering off aripiprazole.
Conclusion
This case highlights the need for a clinician to be alert when he faces a patient with a breakthrough manic episode with use of aripiprazole inspite of the fact that the medication is indicated for use in bipolar disorder. This is possibly due to the novel mechanism of action of the medication i.e antagonism of 5-HT1A along with partial agonism of D2 receptors that could cause frontal dopamine release, contributing to manic symptoms in a patient treated with aripiprazole (Padala et al, 2007).

**NO. 62**

**QUALITY OF LIFE AND SMOKING**

*Lead Author: Matthew Goldenberg, D.O.*
*Co-Author(s): Itai Danovitch, MD, Waguih William IsHak MD, FAPA*

**SUMMARY:**

Background: Tobacco smoking is the leading cause of preventable illness in the United States and around the world. However, much remains unknown about the factors which motivate individuals to smoke. Quality of life has become an important measure of outcomes across all medical specialties, in both research and clinical settings.
Objective: To date, there has not been a critical review of the research relevant to quality of life in smokers. We describe which scales are used to quantify quality of life in smokers, the association between quality of life and smoking initiation and the relationship between smoking, smoking cessation and quality of life.
Methods: We searched Pubmed, Medline, PsycInfo, and Cochrane Database of Systematic Reviews, with inclusion of 2013 using the keywords: quality of life, QOL, health related quality of life, HRQOL, smoking, tobacco, tobacco abuse, nicotine, nicotine addiction, smoking cessation, WHO QOL, SF-36, SCQoL and CCQ. Additionally, reference lists from the identified articles were searched for additional studies. We focused on studies that used QoL measures. Fifty-four relevant studies were included in this review using specific selection criteria.
Results: Low quality of life and depression are associated with higher odds of smoking initiation in adolescence and lower odds of successful smoking cessation. Smoking lowers quality of life and the magnitude of association is dose dependent on the number of cigarettes smoked. Children with parents smoking on a regular basis report lower quality of life. Smoking cessation significantly improves quality of life. These associations have been widely replicated across populations with diverse socioeconomic and cultural groups from around the world.
Conclusions: Increased understanding of the relationship between quality of life and tobacco smoking is important to patients, clinicians and researchers. Quality of life data promotes smokers and practitioners to become more sensitive to the sub-clinical adverse effects of cigarette smoking, thereby improving motivation to quit, cessation rates and treatment outcomes.

**NO. 63**

**DEPRESSION IN MS IN ASSOCIATION WITH TRANSVERSE MYELITIS PATIENTS: A CASE PRESENTATION AND LITERATURE REVIEW**

*Lead Author: Amy C. Gomez Fuentes, M.D.*
*Co-Author(s): Ahmed Albassam, M.D.*

**SUMMARY:**

Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease of the central nervous system (CNS). The cause of MS is unknown. Most patients with MS initially experience relapses with complete or near-complete recovery interspersed with periods of clinical remission. Although some patients have only minimal symptoms, the majority ultimately develop disability over time as a result of incomplete recovery from relapses and/or conversion to a progressive phase of the disease. However, MS is an extremely variable illness and the course of the disease is essentially impossible to predict in an individual patient. Transverse myelitis (TM) is a neurological disorder of unknown etiology that causes an inflammatory response within segments of the spinal cord. The presentation, being similar to MS, may be the first symptom of the underlying chronic demyelinating disease.

The association of multiple sclerosis and psychiatric symptoms has been well documented since the 19th Century when Charcot described mania, hallucinations, and depression among other manifestations of the disease.1 However serious research on depression symptoms in MS didn't really begin until the 1950s,2 by the end of the 60s Surridge identified psychiatric disturbances in 75% of MS patients, including 61% with intellectual decline, and 53% with mood disorder.3 The main challenges in treating depression in MS patients are the high rate of suicidal ideation,4 and that depression in MS patients is often not detected in earlier stages of disease,5 especially in blacks.6 We are presenting a case report of a patient with clinically isolated syndrome (CIS)/ Multiple Sclerosis in association with Transverse Myelitis who presented with symptoms of depression prior to his neurological symptoms. This is followed by a general review of early screening instruments for depression in MS/TM, treatment modalities and recent pathophysiology and immunology.

**NO. 64**

**EXPRESSED EMOTION: A DETERMINANT OF RELAPSE IN SCHIZOPHRENIA? A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Arpita Goswamil Banerjee, M.D.*
*Co-Author(s): Carolina I Retamero, M.D.*

**SUMMARY:**

INTRODUCTION:
Expressed emotion (EE) pertains to care giver's attitude towards a person with a mental disorder. It is a characteristic of the family milieu that has been found to be one of the major psychosocial stressors and important predictors of symptom relapse in a wide range of psychiatric disorders. Research on EE was initiated in the 1950s, with researchers observing that close emotional ties between families could lead to sub-optimal stimulation and social withdrawal by the patient, and that persons with mental illness, such as schizophrenia, living with close relatives who have negative attitudes, are significantly more likely to relapse.
The communication patterns in families with high EE relatives are usually characterized by more intense and negative confronting verbal exchanges. The authors present the case of a young African American male with acute relapse of symptoms of schizophrenia in the background of a family with high EE.
METHODS:
Pubmed and ovid research databases were search using the following key words: Expressed Emotion, Schizophrenia. A retrospective chart review and literature search was conducted.
DISCUSSION:
This case highlights the potential clinical association between EE and relapse of schizophrenia.
Being critical is one of the essential components of expressed emotion and is associated with the poorest patient outcomes. Robust assessment of psychosocial factors and interventions specifically focused on family psychoeducation could play a pivotal role in reducing high EE and relapse of symptoms and facilitate a comprehensive care in patients with schizophrenia.
CONCLUSSION:
High EE is a predictor of relapse in many psychiatric illnesses. Psychiatrists must do a robust assessment of psychosocial factors and interventions specifically focused on family psychoeducation, which could play a pivotal role in reducing high EE and relapse of symptoms and facilitate a comprehensive care in schizophrenic patients.

**NO. 65**

**AN UNCOMMON PRESENTATION OF A COMMON PROBLEM: ALCOHOL WITHDRAWAL DELIRIUM WITH NORMAL VITALS IN A PATIENT WITH BASELINE HYPOTENSION AND BRADYCARDIA**

*Lead Author: James J. Graham III, D.O.*
*Co-Author(s): Ian Peters, D.O.,Camille Paglia, M.D., J.D.*

**SUMMARY:**

Introduction:
Alcohol withdrawal is a very common issue encountered across all subtypes of psychiatry. Its effects on the health of patients are profound and include delirium, seizure, coma, and even death. One of the keystone methods for evaluating alcohol withdrawal is monitoring of vital signs, with an increase in both heart rate and blood pressure being signs of worsening withdrawal. We present here a case of alcohol withdrawal delirium with vital signs within normal range in a patient with baseline hypotension and bradycardia.
Methods :
The OVID and PubMed databases were searched using the following keywords: alcohol withdrawal, relative hypertension, and relative tachycardia.
Discussion:
This case involves a 47-year-old male who presented to the psychiatric emergency service (PES) with paranoid delusions of being drugged by his neighbors. At initial presentation patient denied alcohol and drug use, was oriented to person, place and time, and had vital signs within the normal range. Patient exhibited very bizarre behavior while in the PES and was sent to the medical emergency department for medically clearance and was subsequently admitted to an acute psychiatric unit. The patient eventually admitted to drinking large quantities of alcohol. On the first hospital day, the patient was again sent to the emergency department for worsening delirium. Patient had a witnessed seizure, required intubation, and was transferred to the intensive care unit. Throughout the entire hospital course, the patient's heart rate and blood pressure never elevated to the point that would be expected in such severe withdrawal. Upon discharge the patient was found to have baseline bradycardia and hypotension.
Conclusions:
This case brings into question the utility of solely monitoring vital signs in alcohol withdrawal and the effect that physiologic variability can play in its presentation.

**NO. 66**

**"DON'T LET ME DIE." DOES PSYCHOSIS PRECLUDE CAPACITY TO MAKE END-OF-LIFE DECISIONS?**

*Lead Author: Nicole Guanci, M.D.*
*Co-Author(s): Rashi Aggarwal, M.D.*

**SUMMARY:**

Capacity is defined as a patient's ability to understand his/her medical situation and the risks and benefits of accepting or refusing a specific treatment. It is influenced by a variety of factors, including situational, psychosocial, medical, psychiatric, and neurological factors. Here we present a case of a 42-year-old man with a history of schizophrenia and short

bowel syndrome with resultant chronic hyponatremia, necessitating coordination between medical and psychiatric teams. In the midst of psychosis, the patient was evaluated by psychiatry and determined to have no capacity to make medical decisions regarding treatment of hyponatremia, but was also presumed to have no capacity to make decisions about end of life care by the medical team. However, with further education and a more extensive psychiatric interview, he was actually found to have capacity to make decisions about end of life care, particularly do not resuscitate orders. This case illustrates a number of common misconceptions about capacity evaluations, particularly that psychosis does not preclude a full capacity evaluation, that capacity is a dynamic process influenced by a patient's immediate condition, time, and the specific nature of the procedure or test being proposed, and that education of both patients and all members of the treatment team is necessary.

**NO. 67**

**N-ACETYL CYSTEINE IN PSYCHIATRY: A REVIEW**

*Lead Author: Nihit Gupta, M.B.B.S.*

**SUMMARY:**

N-Acetyl Cysteine is an over the counter nutritional supplement used primarily as a mucolytic agent and in the management of acetaminophen overdose. Recent research in psychiatry has been focused on discovery of alternate psycho-pharmacological agents for treatment of psychiatry disorder and N-Acetyl Cysteine has shown evidence in treatment of various conditions including Behavioral addiction, Obsessive compulsive disorder, Trichotillomania, Bipolar and Schizophrenia.

This is an attempt to review of the latest evidence supporting use of N-Acetyl Cysteine in psychiatry.

**NO. 68**

**LEVOFLOXACIN-INDUCED ACUTE PSYCHOSIS IN A PATIENT WITH RECURRENT URINARY TRACT INFECTIONS**

*Lead Author: Tina Gurnani, M.D.*

*Co-Author(s): San K. Chang, M.D., Almari Ginory, D.O., Sarah M. Fayad, M.D.*

**SUMMARY:**

Introduction:

Fluoroquinolones are among the most commonly prescribed antimicrobials. However, a wide range of adverse CNS effects have been described, including reports of psychotic symptoms.

Case report:

We present a case of a 33 year-old woman with a history of post-partum depression who was admitted to our institution with acute psychosis. Two weeks prior, the patient had been successfully treated with ciprofloxacin and then levofloxacin for recurrent UTI. Shortly after her levofloxacin dose was increased to 500mg, the patient began exhibiting euphoric mood and thoughts of reference. She became hyperreligious and started to baptize her children in the bathtub. After five doses of levofloxacin 500mg, she was found by her husband in the pool, unclothed, and "talking to God." The unusual behavior prompted him to bring her to an outside hospital, where she received lorazepam for anxiety and agitation, and two doses of quetiapine. Levofloxacin was discontinued. She was subsequently transferred to our hospital for further evaluation. Upon admission, she exhibited pressured speech, hyperreligiosity, and paranoid delusions. Neurological exam was non-focal. Further workup, including metabolic laboratories, serum alcohol level, urine toxicology, urine culture, blood cultures, pregnancy test, electroencephalogram, cranial computed tomography scan and magnetic resonance imaging, was negative. Lorazepam was continued and risperidone was initiated at 0.25mg twice daily to treat acute psychosis. Three days later, the patient began to exhibit improvement in psychotic and manic symptoms. Work-up for anti-N-methyl-D-aspartate (NMDA) receptor encephalitis was negative and ultrasound revealed no findings concerning for ovarian teratoma.

Discussion:

In our case, levofloxacin was the most likely cause of the acute psychosis due to the temporal relationship of the rapid onset and resolution of symptoms upon discontinuation of this medication. Furthermore, all other medical workup was unrevealing. While she had a psychiatric history, her depression had been in remission for several years and her current symptoms were not consistent with a primary mood disorder. The mechanism by which levofloxacin exerts neuropsychiatric effects is not fully understood. However, excitatory CNS pathways have been postulated to play a role, since quinolones competitively inhibit gamma-aminobutyric acid (GABA) receptors and activate NMDA receptors. In conclusion, fluoroquinolones are a commonly used class of antibiotic that can precipitate psychotic symptoms, and clinicians should be aware of this serious but potentially reversible complication.

**NO. 69**

**CLOZAPINE IN A GERIATRIC POPULATION: CLINICAL INDICATION AND SAFETY MONITORING**

*Lead Author: Kasia Gustaw Rothenberg, M.D., Ph.D.*

*Co-Author(s): Stephen Boyd, MD, Gary Cheung, MD, Rhona Sommerville, MD*

**SUMMARY:**

Objective: Clozapine has been described as the "gold standard" therapy for treatment-resistant schizophrenia, causing fewer extra pyramidal side-effects than when first generation antipsychotics are used. It has also proved beneficial in treatment-resistant agitation in patients with dementia. Clozapine pharmacotherapy is reported to be of the low fatality rate has been attributed to clinical monitoring systems.

It can lead however to potentially fatal agranulocytosis or myocarditis/cardiomyopathy as well as to a myriad of less severe side effects. The difficulty in monitoring the treatment may be a reason the medication in underutilized in geriatric population despite potential benefits.

Aim: The aim of this study was to analyze efficacy and safety profile of Clozapine use in a cohort of stable patients under the care of geriatric mental health service in Auckland, NZ.

Method: The cohort consisted of 27 geriatric multi-ethnic patients (mean age 74) treated with Clozapine (8 male and 19 female). Monitoring Anti Psychotics System (MAPS) questionnaire was used to monitor side effects and was completed in 21 patients. MAPS questionnaire focused on assessing/ monitoring salivation, seizures, dizziness , falls, sedation, visual symptoms, chest pain, fever, genital, urinary, constipation, nausea, edema.

Results: The medication was utilized predominantly for psychotic spectrum of diseases follow by mood and cognitive dis-

orders. Lower doses of Clozapine (Mean dose 100.96 mg/daily) seemed to be effective in the elderly patient evaluated in this study. Hyper-salivation, constipation and falls seemed to be the most common side effects observed in this population with a median of 3 different side effects noticed in each individual. Proper monitoring allowed however appropriate medical intervention with noticeable remittance undesirable symptoms Conclusion: Clozapine is useful and effective medication for elderly population if appropriate monitoring of side effects is implemented.

**NO. 70**

**COMPLEXITIES OF SAFETY ASSESSMENT IN AN EMANCIPATED IRAQI REFUGEE TEENAGE MOTHER**

*Lead Author: Paola Habib, M.D.*
*Co-Author(s): Vishal Madaan, MD, University of Virginia*

**SUMMARY:**

With ongoing conflicts in the Middle East, the refugee population within the United States continues to increase exponentially. Each refugee brings in his/her own set of values, and traditions, which may significantly impede their access to psychiatric care, as well as create barriers in following the psychiatrist's recommendations. As a result, the treating psychiatrist needs to be better prepared to serve the unique psychiatric needs of the refugee population.
We review the case of a 16-year-old married Muslim female from Iraq, who came to the United States with her much older husband and a toddler, to take refuge from the political instability of her war-torn homeland. She developed symptoms of major depressive disorder 3 months after her arrival, experiencing sadness, isolation, anhedonia, withdrawal, insomnia and poor appetite. Her symptoms worsened with conflicts with her husband, who did not agree with her liberal ways of dressing since arrival to the Unites States. While she viewed this as her way to adapt to the new culture, her husband objected to the change. She attempted to overdose several times and confided that she was noncompliant with treatment. She also revealed that if she is to leave her husband, she would not feel as depressed. When assessing her suicidal risk, she would contract for safety on the condition that she would only try to kill herself if she was coerced to see her husband which was going to be very difficult to avoid.
She had several high risk factors for suicide including several previous suicide attempts, poor insight, and a history of physical abuse. Being in a new country, she lacked the social and familial support, which could help her recover and adhere to treatment. Her emancipation brought in her rights to make her own decisions, although she lacked the required emotional maturity. Yet, as any other teenager, she desired to explore the world, wanting to make her own decisions, and was rebelling against her husband who she viewed as an authority figure. She was hospitalized for safety concerns, and child protective services had to be involved to ensure the safety of her child at home. Her husband threatened to seek sole custody of their daughter should she seek a divorce, and declare her a psychologically unfit mother.
Her interests were in gaining more independence, learning English, obtaining education, and then seeking employment, for which social work was consulted.
Several cultural intricacies were a great learning resource for the treating team. As mentioned already, it is essential for the psychiatrist to understand the importance of the patient's cultural nuances in her decision-making regarding her discharge and follow-up planning. Apart from having understanding mental health providers, it was also important for her to be connected with the legal and social resources necessary in order to introduce her to her rights and her options in the US.

**NO. 71**

**MANAGEMENT OF IMMUNOSUPPRESSANT-INDUCED PSYCHOSIS**

*Lead Author: Jarred A. Hagan, D.O.*
*Co-Author(s): Sherrell Lam M.D.*

**SUMMARY:**

Introduction: Immunosuppressant-induced psychosis is a relatively uncommon medical condition. In 2012 there were 28,051 transplant recipients. With standard immunosuppressant treatment up to 15% or 4,200 patients will develop symptoms of psychosis according to current data. The usual form of treatment for medication-induced psychosis is to stop the offending agent. However, many of these patients must remain on the very medications that are responsible for their psychotic symptoms in order to avoid organ failure. With only a few studies on this topic, treatment of this patient population is complex and challenging.
We review what the current literature says about the evaluation and management of immunosuppressant-induced psychosis through the development of a case study.
Case: We present a case of a 30 year old male with history of renal transplant and no past psychiatric history who presented with new-onset auditory and visual hallucinations within one month of starting immunosuppressive therapy. Following comprehensive evaluations, no psychiatric etiology could be identified, and hallucinations remained stable for over a year. Nephrology did not recommend changing patient's immunosuppressive therapy due to high risk of transplant failure. Due to patient's distress over his hallucinations, we initiated treatment with risperidone.
Discussion: Appropriate, effective and timely care of patients with immunosuppressant-induced psychosis is important to both their physical and mental health. More data is needed to guide management of this high risk patient population. These patients have few options regarding medical and pharmacological management of the physical and psychiatric symptoms. Successful management of these patients not only improves quality of life but increases life expectancy.

**NO. 72**

**CATATONIA: AN UNUSUAL PRESENTATION**

*Lead Author: Sasha Hamdani, M.D.*

**SUMMARY:**

35 yo female with previous history of Schizoaffective disorder, Bipolar type admitted to inpatient unit for worsening racing thoughts and psychosis. Pt historically had 4 episodes of mania accompanied by psychosis starting at age 25. On admission, there was low mood, weight loss, difficulty with sleep, psychomotor agitation, guilt, poor concentration, and irritability for past 8 months. Pt also endorsed AH of the "Devil cussing at me." Team restarted her on home regimen of quetiapine and

divalproex sodium. It was discovered later during the admission that patient had not taken her quetiapine for past 8 months. Pt proceeded to become more manic, so quetiapine was titrated up and divalproex sodium was slightly increased (employed a cautious titration as she initially presented with an elevated ammonia, although no signs of encephalopathy). Pt then had mania resolve, but was residually very psychotic, so risperidone was added. This was discontinued the next day because of GI upset. Pt symptoms were not controlled by quetiapine and pt was becoming increasingly more tachycardic so was cross tapered to olanzapine. Due to her marked distress and influence of her psychotic symptoms, a BH 1:1 was initiated. Pt then started complaining of "jitteriness" which lead to concerns of akathesia. It was assumed to be due to the increasing olanzapine, so pt was switched to IM ziprasidone and later transitioned to oral. Pt had a normal CK, was afebrile, but did have some restlessness and arm rigidity. Pt had TVUS done which showed no teratomas and anti-NMDA receptor were negative. Pt was not tolerating any PO intake and so ziprasidone was held and divalproex sodium was increased. As pt continued to exhibit autonomic instability (with BP and HR), some muscle rigidity, and poor response to neuroleptics, pt was started on clonazepam and all antipsychotics were held. Pt was continued on divalproex sodium and clonazepam and then eventually had resolution of her psychosis and stabilization in her mood, affect, insight and behavior. Based on patient's poor response to escalating doses of antipsychotics, agitation, and autonomic instability, a suspicion for catatonia was raised. After discontinuing antipsychotics and starting pt on benzodiazepines, there were marked improvements in psychotic and mood symptoms. This report focuses on the importance of including catatonia in differential diagnosis despite absence of "typical" presenting features, as failure to do so may result in worsened prognosis and mortality.

**NO. 73**

**CANNABINOID HYPEREMESIS SYNDROME: A CASE REPORT**

*Lead Author: Shaojie Han, M.D.*
*Co-Author(s): Douglas Opler, M.D., Rashi Aggarwal, M.D.*

**SUMMARY:**

Cannabinoid Hyperemesis Syndrome: a case report
Marijuana is the most commonly used illicit drug. Increased marijuana use has been observed as public attitude has softened about its risks. A growing number of cases of cannabinoid hyperemesis syndrome (CHS) have been published worldwide in recent years. CHS is characterized as recurrent episodes of nausea and vomiting which are alleviated by compulsive hot bathing. Its differential diagnoses include psychogenic vomiting, bulimia, cyclic vomiting, alcohol use, opioid use, drug seeking behavior, as well as other medical causes involving the gastrointestinal or central nervous system. Anxiety and psychological stressors are reportedly related to cyclic vomiting and psychogenic vomiting, rather than CHS.
We present a case of a 28-year-old man with a history of anxiety and chronic cannabis use who presented with recurrent nausea and vomiting. CHS was diagnosed by the psychiatry consultation service. Cessation of marijuana was recommended. At 2-month follow-up he had no further episodes of vomiting and his clinical anxiety was in remission.
The objective is to inform readers about CHS, a lesser known syndrome, and its potential for comorbid clinical anxiety. Anxiety is known to be a predictor of heavy marijuana use, so is more likely to be present in CHS patients.

**NO. 74**

**AN INTERESTING PRESENTATION OF MUNCHAUSEN SYNDROME: A CASE REPORT**

*Lead Author: Asma Hashmi, M.D.*
*Co-Author(s): Vijayabharathi Ekambaram, M.D., M.P.H., David H. Tiller, M.D.*

**SUMMARY:**

BACKGROUND: Munchausen syndrome is a subtype of factitious disorder in which patients intentionally produce physical signs with recurrent hospitalizations, frequent travel and dramatic false tales. We report a case of a patient with Munchausen Syndrome who extensively travelled across United States requiring multiple hospitalizations and surgical procedures for chest pain simulating aortic dissection.
CLINICAL PRESENTATION: Mr. X is a 32 y/o Caucasian male who presented to the ER with tearing chest pain radiating to the back. Patient had 3 recent visits to ER with same symptoms. He reported an allergy to iodine, so CT Angiogram could not be performed. He also refused MRA and reported having clips in his heart from previous aortic root repair; this was contradictory as MRA had been done on previous visit and showed no aortic dissection. On this visit, cardiology and cardiothoracic surgery cleared him. Physical exam in the ER was normal with BP 103/60 in both arms. Labs showed WBC :0.8, ANC: 240, Hgb: 8.1, Hct: 23.9, and Platelets: 37; CMP wnl. Patient was admitted to medicine service for work up of pancytopenia and found to have AML. Primary team reported that patient was giving inconsistent information about his medical history and exhibiting pain med seeking behavior. Psychiatry was consulted for recommendations regarding behavioral management. During psych assessment, patient initially refused to talk, and then reluctantly gave vague information about his social history and whereabouts. He gave specific details about his medical conditions and reported past diagnosis of Ehlers Danlos Syndrome and aortic dissection repair done in Germany. Medical records were obtained from past hospitalizations, which revealed that he had travelled across several states, misrepresenting symptoms of aortic dissection. During this hospital stay, patient was suspected of trying to infect his catheter port, simulate symptoms of meningitis, and self-inflicting an abdominal wound by scratching. Tests were negative for meningitis and ultrasound abdomen was normal. Patient also had behavioral issues like exhibitionism and accusing female staff of being sexually inappropriate.
DISCUSSION: We conducted a literature search and discovered several articles on this patient from different academic institutions as he travelled from state to state. Each time, he would leave AMA after physicians confronted him and refused to perform median sternotomy. This demonstrates a classical presentation of Munchausen syndrome whereby patient misrepresented symptoms and was willing to undergo invasive procedures for the purpose of assuming the sick role. He had misrepresented his story to the extent of successfully convincing physicians to do a median sternotomy in the past. There was also speculation whether AML was induced by self administering Lindane or Benzene. Patient refused to undergo

chemotherapy and left AMA, also classic behavior of patients with Munchausen Syndrome.

**NO. 75**

**HOARDING DISORDER: SCREENING, COMORBIDITIES, NEUROPHYSIOLOGY, AND TREATMENT**

*Lead Author: Molly Hawke, M.D.*

**SUMMARY:**

Introduction: In the last decade, public awareness of hoarding has increased significantly. Whereas hoarding was only mentioned as a symptom of Obsessive Compulsive Personality Disorder in previous editions of the DSM, DSM 5 has categorized Hoarding Disorder as a distinct diagnosis. As a consequence, psychiatrists are now faced with the responsibility of identifying patients who hoard, assessing its severity, and treating this condition, which is often found comorbid with other psychiatric disorders.

Objectives: To review the current literature on Hoarding Disorder, including: methods of screening, comorbid psychiatric diagnoses, neurophysiology, pharmacologic and non-pharmacologic treatments.

Methods: This study consists of a literature review performed by searching PubMed using keywords Hoarding Disorder alone and Hoarding Disorder AND the following terms individually: assessment, screening, comorbidity, neurophysiology, treatment, and CBT. Search for these terms resulted in 425 articles total ranging in publication date from 1966 to the present. Articles were reviewed based on relevance, content, and availability.

Results: Clinically significant hoarding is thought to be prevalent in 2-5% of the general U.S. population. Hoarding can be assessed using the Saving Inventory- Revised, which has extensive data supporting its reliability and validity. This 23 item questionnaire with three subscales can be tedious for clinicians to score. A more useful took is the Hoarding Inventory Scale, which has excellent internal and test retest relability to specifically detect Hoarding Disorder. While Hoarding can be a symptom of OCD, in reality, only 5-10% of OCD patients hoard. Up to 80% of Hoarding Disorder patients do NOT meet criteria for OCD. The most common comorbid disorders in Hoarding Disorder patients are: Major Depressive Disorder, followed by Social Phobia, and Generalized Anxiety Disorder. Most neuroimaging studies have examined neurophysiology of Hoarding in the context of OCD. These studies have shown hoarders to have significantly lower glucose metabolism in the anterior and posterior cingulate gyrus, which function in focused attention, error detection, decision making and monitoring visual events, spatial orientation, and processing emotional stimuli respectively. Early studies on hoarders with comorbid OCD suggested that hoarding as a symptom indicated a greater degree of treatment resistance, but later studies have not supported this. Harm reduction therapies have been studied as well.

Conclusions: While clinically significant hoarding is very prevelant, little is known about treatment of Hoarding Disorder patients as a distinct population. Many studies look at hoarding in the context of an OCD diagnosis, whereas other mood and anxiety disorders are far more common in patients who hoard.. More research is needed specifically on both pharmacologic and non-pharmacologic treatment approaches to patients who hoard.

**NO. 76**

**YOGA AS A QUALITY IMPROVEMENT PROJECT IN THE INPATIENT PSYCHIATRIC SETTING**

*Lead Author: Veronique Haymon, M.D.*

*Co-Author(s): Gayle R. Pletsch, M.D., Erik L. Kinzie, M.D.*

**SUMMARY:**

Introduction: As complementary and alternative medicine continues to expand, yoga is becoming a widely accepted healing modality. Hospitals are beginning to institute voluntary yoga programs especially within the psychiatric inpatient setting. Hypothesis: Patients will have a perceived change in mood, anxiety and satisfaction level with their overall treatment when yoga is used as an adjunct intervention.

Methods: Patients admitted to East Jefferson Inpatient Psychiatric Unit from June 2013 to July 2013 were offered voluntary yoga classes three to four times weekly. Upon a patient's discharge they were offered a satisfaction survey.

Results: There were 80 total patient participants in the yoga classes of which 45 completed surveys. Participants agreed or strongly agreed that participating in yoga classes helped them feel better physically in 95.5% of cases. Yoga classes were rated as a benefit to patient's overall treatment 82.2% of the time and 88.8% of participants felt having yoga classes increased their level of satisfaction with their psychiatric unit. Patients would recommend yoga be taught on psychiatric units in 91.1% of responses. The same number agreed or strongly agreed that yoga classes helped increase their mood as well as helped them feel more calm.

Conclusion: Our study indicates that patients may have a greater satisfaction with their psychiatric unit as well as increased mood, decreased anxiety and greater feeling of physical well-being when participating in a voluntary yoga program in an inpatient psychiatric setting.

Discussion: Based on the findings of our study, patients had a significant improvement in their inpatient psychiatric experience as the result of the institution of yoga classes. Of note there were two participants who had aberrant responses when correlated with their free text answers to questions. Both of these had stated they enjoyed the classes in free text and had answered strongly disagree or disagree to all questions indicating they may have chosen the wrong column to check mark. Were this to be the case, 100% of participants would have experienced a benefit in their health as a result of participating in the class. More studies are indicated to clarify our understanding of the benefits of yoga programs in the inpatient setting.

**NO. 77**

**PANIC ATTACKS MASQUERADING AS GUILLAIN BARRE SYNDROME IN AN ADOLESCENT WITH A HISTORY OF ANXIETY AND DEPRESSION**

*Lead Author: Vineka Heeramun, M.D.*

*Co-Author(s): Vijay Pandav,M.D, Chenelle C.M Joseph,M.D, Agaebullam Uga,M.D, Trinadha Pilla,M.D, Jeffrey I. Bennett, M.D*

**SUMMARY:**

Introduction: Guillain Barre syndrome (GBS) is a condition of acute immune-mediated polyneuropathies. It typically presents as muscle weakness with loss of deep tendon reflexes, usually

progressing over a period of 2 weeks. Severe respiratory muscle weakness necessitating ventilatory support develops in up to 30 percent of patients. We report an atypical manifestation of GBS in a patient who presented initially with panic attacks.
Case: A 17 year old Caucasian female patient with a history of anxiety and depression presented to the emergency room twice over 72 hours with similar complaints of dysesthesia in her hands and feet and shortness of breath. Given her history of anxiety, she was diagnosed with a panic attack and was sent home on lorazepam. On the way home she started having difficulty walking. Upon arriving home, her mother went to check on her and found her on the floor having difficulty standing up again. Finding her short of breath, her mother called the ambulance. She was found to be cyanotic, was intubated for severe respiratory distress and admitted to our ICU. On examination, muscle strength was severely impaired in all extremities with flaccid tone, loss of sensation, absent reflexes, loss of facial expression. She was suspected to have GBS and was started on intravenous immunoglobulin. Cerebrospinal fluid showed an elevated protein of 161, consistent with the diagnosis.
She eventually regained voluntary facial expression, neck and shoulder movement as well as tactile sensation over her chest and extremities.
Discussion:
1.Cardinal features of GBS include progressive muscle weakness. Anxiety has been reported as a sequelae of the neurological impairments of GBS. We present a patient with the atypical presentation of panic attacks early on in the course of the illness.
2.It is not uncommon to overlook clinical symptoms or attribute them solely to psychiatric conditions in patients diagnosed with mental illness.Recognition of medical illness in this population remains challenging.
3.Dyspnea is a feature of multiple neurological illnesses, including seizure disorder, multiple sclerosis, GBS, Amyotrophic lateral sclerosis, spinal cord injury, myasthenia crisis. An unbiased history and a thorough physical examination, allows timely recognition of potentially fatal conditions. Review of the literature points to deficiencies in medical history and physical examination in the emergency room,most frequently the neurological examination. Consequently, it is recommended that all patients coming to the emergency room, including those presenting for psychiatric complaints receive a full medical eva1uation.
Conclusion: In this era of technological advancement, diagnostic tests threaten to take precedence over clinical judgement. The psychiatric patient is particularly vulnerable to under-recognition of medical co-morbidities. We present a case of neurological emergency which escaped detection in the emergency room despite two visits.

**NO. 78**
**CHALLENGES OF TREATING PSYCHOTIC SYMPTOMS IN A PATIENT WITH NEUROPSYCHIATRIC LUPUS: A CASE REPORT**
*Lead Author: Elizabeth H. Helton, D.O.*
*Co-Author(s): Gulam A. Noorani, M.D., M.P.H.*

**SUMMARY:**
Introduction: Psychosis as a neuropsychiatric manifestation of systemic lupus erythematous (SLE) is rare. The literature is inconsistent with exact prevalence rate of psychosis in patients with SLE; however, the general agreement is about five percent of patients diagnosed with Neuropsychiatric SLE experience psychotic symptoms during the course of their illness. The underlying pathogenesis is presently being researched and current literature is limited to case presentations in which patients are treated with an atypical or typical antipsychotic. We present a case where new onset psychosis secondary to Neuropsychiatric SLE was treated independently with an atypical and typical antipsychotic.
Case Report: The patient is a 17-year-old African immigrant who was diagnosed with SLE in the summer of 2011 while living in Florida. His initial symptoms of fatigue and joint pain resolved spontaneously without medical intervention. The patient had recurrence of initial symptoms during the winter of 2013 which resolved with medications. Subsequently, in the summer of 2013, while pursuing an academic internship in New York, he began developing psychotic symptoms. The patient was admitted to a local hospital and treated with appropriate medications and Risperidone. Despite treatment with Risperidone, the patient continued to respond to internal stimuli and experienced worsening of his auditory hallucinations and delusions of persecution. He then presented to a nearby academic hospital for a second opinion. He was managed by the medical team and psychiatry was consulted for management of psychosis and the patient was treated with Risperidone. There was significant improvement in his symptoms of paranoia. The patient's family was resistant to psychiatric intervention and asked for discontinuation of Risperidone, however, were agreeable to a trial of Haloperidol. The patient was started on low dose Haloperidol regimen, along with changes to his medical regimen, and his psychiatric symptoms worsened. Haloperidol was discontinued and subsequently the patient was discharged on Risperidone.
Discussion: The initial choice of Risperidone was based on previous symptom improvement rather than an established protocol. The discontinuation of Risperidone was per family request as there was a significant improvement in psychiatric symptoms. However, as the patient continued to experience residual psychosis, Haloperidol was initiated along with major medical medication adjustments. Due to that, it was hard for the Psychiatry team to determine the mechanism behind his symptom decline. However, based on our experience, the patient demonstrated more favorable symptomatic improvement with an atypical antipsychotic.
Conclusion: Neuropsychiatric manifestations of SLE are associated with increased morbidity and mortality. Further research is needed to find improved evidence for treatment of psychosis in patients with Neuropsychiatric manifestations of SLE.

**NO. 79**
**POSTICTAL MANIA TREATED WITH ECT: A CASE REPORT**
*Lead Author: Wesley Hill, M.D.*
*Co-Author(s): Almari Ginory, DO*

**SUMMARY:**
Background: Postictal mania is a known phenomenon which usually presents late in the course of epilepsy. The literature on first time or subclinical seizures causing manic or psychotic episodes is sparse, as this is seemingly uncommon and difficult to diagnose in an acute setting.
Aims: To present a case of new onset fulminant mania in a middle aged man without medical or psychiatric history, the

etiology of which was likely a subclinical seizure, and the successful treatment of such using ECT.
Case Report:
(Some details have been altered to protect patient anonymity, without significantly changing the case.)
A 54 year old married Caucasian male with no prior psychiatric history presented to the ED with an acute psychotic episode which evolved into full blown mania. He had been feeling increasingly stressed out in the weeks leading up to hospitalization due to recently moving to a new house, followed by a family a road trip to go camping. During the drive home from the vacation, the patient, "Suddenly had an epiphany." He was driving in the rain and started repeating himself over and over saying, "I am concentrating, I am concentrating." He pulled the car over and began making statements that he understood it all now. His wife thought the patient might be having a stroke, and called EMS. Upon arrival to the ED, the patient was disoriented, terrified and had to be restrained. Over the following days an extensive medical work up did not reveal an etiology for his symptoms. During this time the patient stopped sleeping altogether and started having delusions of grandeur, persecution and hyper-religiosity. He was transferred to psychiatry where his symptoms persisted despite treatment with high doses of haloperidol and lorazepam. His wife then consented for the patient to have ECT. His mania and psychosis improved after the first treatment, and completely resolved by the fourth. Neurology had been following the patient but was unable to obtain EEG monitoring until after hospitalization. Upon further outpatient work up, Neurology determined this episode was likely a prolonged temporal lobe seizure with postictal psychosis/mania.
Conclusions: Any atypical presentation of mania or psychosis warrants a thorough medical work up to look for underlying organic causes. EEG is not routinely ordered in such cases, especially if no seizure-like activity has been observed, and there is no history of epilepsy. The prevalence of mood and psychotic episodes caused by subclinical seizures is wholly unknown, and warrants further investigation.

**NO. 80**
**THE FLORIDA SYRINGE EXCHANGE INITIATIVE**
*Lead Author: Marek Hirsch, M.D.*

**SUMMARY:**
Introduction: Over the past 3 decades, Syringe Exchange Programs (SEPs) have reduced the rate of infectious disease transmission amongst Intravenous Drug Users (IVDUs) by 80% in the US. Still, in 2007 IV drug use accounted for 15% of the new Hepatitis B infections, 44% of the new Hepatitis C infections, and in 2009 for 9% of the new HIV infections. Politics has regularly posed a challenge for these life-saving programs and Florida is 1 of 15 states to ban them entirely. In 2011 it was found that the prevalence of HIV infections amongst IVDUs in Miami is 22.8%, compared to 11.7% in San Francisco where SEPs are legal. In 2012, 4 University of Miami Medical Students used the political resources of the Florida Medical Association (FMA) to lobby for a change in the Florida Statutes to legalize these programs. Methods: These students wrote a resolution based on the data stated above, asking the FMA to seek legislation that would amend Chapter 893 of the Florida Statutes to legalize SEPs. If approved by the FMA at the 2012 Annual Meeting, it would be placed on their 2013 legislative agenda, to craft a bill and recruit sponsors in the Florida Legislature. Co-sponsors, State-wide endorsements and testifying at committee hearings would be necessary to push it through the legislative process. Results: In July, 2012 at the Annual meeting the resolution won passage. Before the 2013 FL Legislative session the bill was written to change FL Statute 381 rather than 893, authorizing the FL DoH to establish and oversee these programs and State Rep Mark Pafford and State Senator Gwenn Margolis sponsored the bill. It received 4 committee assignments in both the House and Senate, but gained traction with dozens of endorsements and media coverage from NPR, ABC News and the Miami Herald. The House Health Quality Subcommittee passed the bill unanimously with an amendment to be a 5-year pilot project only in Miami-Dade County. The House Judiciary committee did not hear the bill because of opposition from the Florida Sheriffs Association. In the Senate, the bill passed unanimously through the Health Policy Committee, then with a 5-2 vote in the Criminal Justice Committee. On the Senate floor Gwenn Margolis asked for a vote postponement to next year, knowing that the bill was locked in the House. Discussion: Epidemiological data shows that SEPs save lives and tax dollars from averted infections, so we attempted to influence FL State policy. Though many felt that SEPs are good policy, State Reps and Senators are beholden to their constituents. Additionally, lobbying power from the law enforcement community was substantial and ultimately blocked the bill. We later learned that their concerns centered mainly on the practical enforcement aspects of changing the law. If these details in the language of the bill are addressed and a coalition with FL law enforcement is established, the bill stands a good chance of being passed in a future legislative session.

**NO. 81**
**CONTRIBUTION OF VEGETATIVE SYMPTOMS IN OBSCURING DEPRESSION AND ANXIETY IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA**
*Lead Author: Cord D. Huston, M.D.*
*Co-Author(s): John A. Hunter Psy.D., Wendy L. Huston, Parmpreet Kaur, Travis W. Mecum, Vernon D. Rowe, M.D., Isadore S. Tarantino, Kenneth A. VanOwen, M.D.*

**SUMMARY:**
Objective: A retrospective study to assess the degree of prevalence of depression, stress, anxiety, and vegetative symptoms in patients diagnosed with obstructive sleep apnea (OSA) and to examine the interrelationships between these mood symptoms.
Background: Patient's with obstructive sleep apnea often have comorbid depression. What has been unclear in the current literature is how much vegetative symptoms of OSA contribute to the diagnosis of depression versus being comorbid with it. The point prevalence in the US per 2010 report released by the CDC for depression in adults from 2006-2008 is 9% for depression with 3.4% with major depression. They also report a 12 month prevalence of anxiety in adults of 10% based on a study by Kessler et al (2009).
Methods: This study is based on a retrospective review of 541 patients who underwent polysomnography while being evaluated in a neurology outpatient clinic. Of 541 patients, 510 patients completed a Depression Anxiety and Stress Scale 21

(DASS21) and Chicago Multi-scale Depression Inventory (CMDI) self-assessment scale. 31 patients were excluded due to completing only one or neither of the scales. Patients were scored on depression, anxiety, stress, and vegetative symptoms. Patients met criteria for these mood symptoms if they scored at least moderate or higher.
Results: Of 510 patients, 432 were found to have OSA. Of these, 27% had depression; with 8% scoring for severe depression. 33% of these patients were found to have anxiety. 42% had vegetative symptoms. In patients expressing mixed symptoms: 18% had both depression and anxiety, 19% patients had depression and vegetative symptoms, and 22% had anxiety and vegetative symptoms. 16% had depression and stress, and 20% had anxiety and stress.
Conclusions: Vegetative symptoms were prevalent in 42% of patients who were found to have obstructive sleep apnea. 23% of this had no depressive symptoms at all which was consistent with our initial hypothesis that a large amount of patients have solely vegetative symptoms which may be confused with depression.
However, the prevalence of depression and anxiety in this population was a staggering near three fold higher than national average. This begs the question of how often are patients with depression co-morbid with OSA being treated solely for depression when seen by a psychiatrist without a sleep study follow up.
Further, with 33% of this population scoring moderate or higher on anxiety and 18% of these mixed with depression it raises the concern about OSA being missed in this population as well.
While first line treatment for anxiety is SSRI therapy, the use of benzodiazepines as a second line for psychiatrists and often as the first line in primary care physicians can lead to a worsening of OSA and subsequent worsening of depression, anxiety, and daytime fatigue.

**NO. 82**

**DEMENTIA WITH LEWY BODIES AND REM SLEEP BEHAVIOR DISORDER: A CASE STUDY AND REVIEW OF THE LITERATURE**

*Lead Author: Geeta Ilipilla, M.D.*
*Co-Author(s): Carolina Retamero, M.D.*

**SUMMARY:**

Background:
Dementia with Lewy bodies (DLB) is characterized by core features of fluctuating cognition, recurrent visual hallucinations and features of Parkinsonism. In addition, DSM-5 includes REM sleep behavior disorder (RBD) and severe Neuroleptic sensitivity as suggestive features for a possible diagnosis of DLB. RBD is characterized by complex and often very violent motor behaviors associated with enactment of violent dreams, frequently occurring in the later portions of the sleep period. Long term prospective studies have shown that 30-65% of cases with RBD will eventually develop a neurodegenerative disorder over 5-20 years of follow up. The onset of RBD is noted to precede cognitive decline by an average of 6-10 years. We present the case of a 74 year old male inpatient in a Geriatric psychiatry unit who was diagnosed with DLB based on findings of Sub cortical dementia, paranoia, visual hallucinations and fluctuating cognitive deficits. He developed episodes of complex motor activity and extremely violent behavior occurring during sleep in the latter half of the night suggesting possible RBD.
Methods:
A retrospective chart review of the case was completed. A pub med search was conducted using the keywords Dementia with Lewy bodies (DLB) and REM sleep behavior disorder (RBD).
Discussion:
The patient did not have exposure to the environmental risk factors for RBD such as smoking, excessive caffeine or alcohol use and head injury. He was not on medications known to cause RBD such as Phenelzine, TCA's, SSRI's or Beta blockers. He came to medical attention as a result of violent behavior exhibited during one of the sleep related episodes. The pharmacological agents studied in the treatment of RBD included Clonazepam, Melatonin and Pramipexole. Despite concerns for paradoxical agitation, hypotension and falls, our patient was tried on Clonazepam and had a good response.
Conclusions:
Unrecognized REM sleep related behaviors have high potential for injury to patients or their bed partners. Therefore, it is important to screen for and treat RBD in patients with degenerative dementias. Early recognition of RBD also predicts the progression of cognitive decline in these Neurodegenerative disorders.
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**NO. 83**

**GUANFACINE FOR TREATMENT OF OBSESSIVE-COMPULSIVE DISORDER**

*Lead Author: Lakshit Jain, M.B.B.S.*
*Co-Author(s): Piyush Das, M.D., Abhishek Rai, M.D.*

**SUMMARY:**

Obsessive-compulsive disorder (OCD) is frequently treatment resistant and causes major distress to the patient. Guanfacine, an alpha-2 receptor agonist, is a well-known medication for Attention-deficit/hyperactivity disorder (ADHD) and Tourette's disorder [1,2]. With the ability of guanfacine to decrease the distracting property of irrelevant stimuli following stimulation of noradrenergic activity, guanfacine presents itself as a viable option in OCD [3].To the best of our knowledge, this is the first case report of a patient with OCD responding to a trial of guanfacine.
Patient is a 45 year old Caucasian male with OCD, excoriation disorder, paraphilic disorder and hypothyroidism along with past history of alcohol and cannabis use disorders, who has been residing in a State mental health facility under commitment for mental illness and dangerousness. He had been maintained on a stable regimen of mixed amphetamine salts, citalopram and trazodone when he developed an episodic exac-

erbation of anxiety without antecedent triggers, also accompanied by frequent compulsive hand-washing and skin-picking and biting involving both hands. Patient reported that these compulsive behaviors helped him cope with his anxiety. An empiric trial of guanfacine, given to replace mixed amphetamine salts, was found to result in significant reduction in his OCD symptoms. On subsequent regular follow- ups for over a year, patient was able to sustain remission of his OCD symptoms on guanfacine.

Guanfacine is a promising relatively new drug which has received FDA approval for use in ADHD as an adjunct to psychostimulants. Recent works on guanfacine indicates that it may have an effect on impulsive decision making via its action on ventral hippocampus [3]. Hippocampus – amygdala complex has been implicated in refractory cases of OCD with multiple imaging studies showing a link between these two [4]. While guanfacine is known to be effective in other psychiatric disorders, there have been no previous reports of its utility in patients with OCD. Based on our experience with this single patient, we hypothesize that guanfacine might have a role in treatment of OCD and further research in this direction might yield more convincing findings in support of this hypothesis.

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**NO. 84**

**ULTRASOUND GUIDANCE OF OLANZAPINE LONG-ACTING INJECTABLE TO AID IN ADMINISTRATION ACCURACY**

*Lead Author: Surani Jayaratna, M.D.*

*Co-Author(s): Chris Fox, M.D., Gerald A. Maguire, M.D.*

**SUMMARY:**

In 2009 the FDA approved Olanzapine Long Acting Injectable (LAI) for the acute and maintenance treatment of schizophrenia. The safety profile is considered similar to that of the oral formulation, with the exception of the risk of Post-Injection Delirium/Sedation Syndrome (PDSS) which was found to occur in <0.1% of injections in clinical trials. PDSS is described as "events of sedation, from mild in severity to coma, and/or delirium, including confusion, disorientation, agitation, anxiety or other cognitive impairment." Consequently a risk management plan (RMP) is mandated, including a 3 hour post-injection observation period. PDSS is likely the result of accidental intravascular injection of olanzapine, leading to supratherapeutic concentrations of olanzapine in the blood stream. It can be hypothesized that under ultrasound guidance, where vessels can be clearly visualized and avoided, the risk of PDSS would be reduced, if not eliminated. To our knowledge this is the first report of ultrasound guided administration of Olanzapine LAI.

A 23 year old female suffering from Bipolar disorder (approval for oral olanzapine but not LAI) and Anorexia nervosa, who had 10 years of mood instability and malnutrition with a BMI of 14, received benefit from olanzapine 10mg PO QHS. However, due to non-adherence with oral medication, she had multiple repeat hospitalizations and was offered Olanzapine LAI. Due to her thin frame, extra precautions were taken with administration. With the patient lying on her left side, the right gluteus maximus muscle was identified in longitudinal and transverse planes. There was a paucity of fatty tissue noted just under the skin line. Local vasculature was noted using color Doppler. With the transducer in the transverse plane (with relation to the gluteus maximus muscle), a 19 gauge needle was inserted into the skin under the transducer's longitudinal plane. This "in-plane" technique allowed for complete visualization of the needle tip and shaft producing a characteristic "ring down" reverberation artifact. Once the needle was correctly targeted, 2.7mL of volume (210mg) was observed under real-time ultrasound visualization to enter the muscle tissue. Because the adjacent vasculature was visualized, these vessels were avoided and no extravasation into vasculature was noted.

This case illustrates the use of bedside ultrasound to ensure accurate injection when administering Olanzapine LAI. LAIs are thought to improve adherence due to less frequent and clinician administration. However, the risk of PDSS and the need for a RMP are barriers to its usage. Bedside ultrasound is considered to be a convenient, accurate and safe imaging procedure. This case illustrates that ultrasound guided administration of Olanzapine LAI may be a useful strategy to prevent PDSS and may be especially beneficial in patients with sparse muscle mass.

**NO. 85**

**SUBJECTIVE SLEEP QUALITY AND SUICIDAL IDEATION AMONG COLLEGE STUDENTS IN BOMBAY: A STUDY OF 3,300 STUDENTS**

*Lead Author: Salima Jiwani, M.B.B.S.*

*Co-Author(s): Shamsah B. Sonawalla, M.D.,Meghana Srinivasan, M.A.,Rajesh M. Parikh, M.D.*

**SUMMARY:**

Objective: The purpose of this study was to assess subjective sleep quality and suicidal ideation among college students in Bombay.

Method: 3300 students across two colleges in the Greater Bombay area were screened for subjective sleep quality, depressive symptoms and suicidal ideation (mean age: 19.2 + 1.1; 66.8 % women; Arts: 45%, Science: 30.3%, Commerce: 15.6%, Management Studies: 9.1%).

After obtaining written, informed consent, the Pittsburgh Sleep Quality Index (PSQI) and the Beck Depression Inventory (BDI) were distributed to all students. Students who scored > or =16 on the BDI, or > or =1 on BDI item #9 (suicidal ideation item), and who consented to be interviewed, were evaluated using the MDD module of the Structured Clinical Interview for DSM-IV-TR (SCID-P). "Poor sleeper" was defined as a student with a PSQI global score of > or = 5. Significant depressive symptoms were defined as a score of >or = 16 on the BDI. Chi square tests and logistic regression were used for data analysis.

Results:

17.2% of the students scored >or = 16 on the BDI. There was no significant difference in BDI total scores across age, gender and

year in college. Mean total BDI scores were found to be highest among management and science students compared to commerce and arts students (p<0.0001).
17% of the students reported suicidal ideation (as assessed by BDI item 9 score >or= 1). There was no significant difference in suicidal ideation across age, year in college and stream of study. Significantly more women reported suicidal ideation compared to men (18.8% vs 13.6%; chi square = 13.81, P<0.001).

40.2% students were found to have significant sleep disturbances as assessed by PSQI global scores of >or= 5. Gender, year in college and age did not have a significant relationship with sleep disturbances. Stream of study correlated significantly with global PSQI scores:
49% management students, 42.2% science students, 42.1% arts students, and 28.9% commerce students reported significant sleep disturbances (chi-square= 33.12, P<0.01). Students with poor sleep quality (PSQI global score >or= 5) had a nearly two times higher probability of reporting suicidal ideation (BDI#9 score > or =1) compared to those without poor sleep quality, after controlling for age, gender, year in college, stream of study and total BDI scores (odds ratio=1.89).
Conclusion: A substantial percentage of students in this sample reported experiencing significant sleep disturbance, which in turn was associated with a higher risk of suicidal ideation. This study highlights the importance of screening for sleep disturbance and suicidal ideation among college students, and the need to plan and implement appropriate intervention strategies in this population.

**NO. 86**

**FITNESS FOR DUTY: A SYSTEMATIC ANALYSIS OF TREATMENT EFFECTS ON DEPRESSION SEVERITY FOR VOLUNTARY VERSUS MANDATED PHYSICIANS**

*Lead Author: Robert S. Johnson, J.D., M.D.*
*Co-Author(s): J. Christopher Fowler, Ph.D., Kristi A. Sikes, M.D., Jon G. Allen, Ph.D., John M. Oldham, M.D.*

**SUMMARY:**

There is a dearth of literature regarding the effectiveness of voluntary versus mandated treatments for impaired physicians. In this retrospective chart review, we examined recovery rates with regard to BDI scores of physicians whose treatment was voluntary versus physicians whose treatment was mandated or coerced either by a licensure board or a place of employment. Physicians admitted to the Menninger Clinic's Professionals in Crisis unit between 2009 and 2012 were divided into voluntary and mandated physician groups and analyzed statistically using an ANOVA model and a subsequent univariate analysis of covariance. Our results show that at the time of admission, there was a significant difference in mean BDI scores, with voluntary physicians being more depressed. However, there was no statistically significant difference in rate of improvement in mean BDI scores between the voluntary and mandated groups. Additionally, there was no significant difference between the two groups in either the rate of return to the healthy range of BDI scores, or with regard to whether their BDI scores had decreased by two standard deviations or more by the time of discharge. These findings may suggest that state physicians health programs can continue to mandate physicians into treatment with reduced concern that mandatory treatment would be less efficacious than voluntary treatment.

**NO. 87**

**A RETROSPECTIVE STUDY OF RESTRAINT AND SECLUSION IN INPATIENT PSYCHIATRY UNIT IN COMMUNITY HOSPITAL BEFORE AND AFTER BEGINNING OF RESIDENCY SERVICES**

*Lead Author: Taranjeet S. Jolly, M.B.B.S., M.D.*
*Co-Author(s): William Cardasis, M.D.,Fadi Matta, M.D.*

**SUMMARY:**

Introduction: People with acute symptoms of serious mental illness appear more likely to commit violent acts than those in the general population. This phenomenon is especially true on inpatient psychiatry units. There is a one-in-ten chance of a nurse suffering an injury of any kind as a result of patient aggression every year. It is thus important to mitigate, prevent if possible and manage violent patient behavior. A variety of methods, including de-escalation techniques and psychotropic medication use, are available. In extreme cases, when less restrictive means prove unsuccessful, seclusion or restraint can be used to manage violent patient behavior.
Methods: We designed a retrospective study of patients who had the diagnoses most likely to get order of restrain/ seclusion namely 1) anxiety, depressive (unipolar) or somatoform disorder; 2) schizophrenia and other psychosis; 3) bipolar disorder; 4) mental retardation or cognitive problems; 5) personality disorder; and 6) substance-induced mental disorder. We looked at the differences in the rates of seclusion and restraint orders for patients on the inpatient psychiatric unit before and after the onset of psychiatric residents training patients at St. Mary Mercy hospital. We also studied the correlation between the rates of restraint or seclusion and the length of stay.
Results: From June 1st, 2012 through August 31st, 2013, 1,603 patients were admitted to the Psychiatry inpatient service at St. Mary Mercy Hospital. Among those, 1,577 (98%) patients met the inclusion criteria. During that period, 72 patients went into seclusion with or without restraint at least once or more, with a total of 160 events. The rate of seclusion with or without restraint increased from 7.7% in patients admitted to the hospital before the onset of psychiatric residents training to 12.5% in patients admitted after onset of psychiatric residents training (P= 0.002). The rate of seclusion with or without restraint was higher in Graduate Medical Education (GME) patients (18%) compared to patients admitted to non-GME service (9.7%) (P= 0.001). Among the included patients, length of stay was shorter in patients who did not go into seclusion or restrain (7.1 + 5.6 days), compared to patients who were ordered into restrain or seclusion (11.5 + 7.9 days) (P<0.0001).
Discussion: Our study showed that the rates of seclusion with or without restraint increased after the onset of psychiatric residents training at our hospital. The rate was higher in patients under GME services. In general, patients who went into seclusion or restraint had a longer hospital stay. We will use this data to create and implement protocol for de-escalation measures for patients who get violent on the inpatient unit, before using measures like seclusion or restraint. Such performance improvement measures could help to improve patient care, patient and staff safety, as well as to improve the utilization of manpower on the inpatient unit.

**NO. 88**

**A 23-YEAR OLD WITH FOREIGN BODY INGESTION: A DIAGNOSTIC QUANDARY**

*Lead Author: Chenelle M.C. Joseph, M.D.*
*Co-Author(s): Vineka Heeramun, M.D., Aghaegbulam Uga, M.D., Robert Pary, M.D.*

**SUMMARY:**
Foreign body ingestion is commonly seen in children, but has also been increasingly documented in individuals with intellectual developmental disorder and personality disorders. Prison inmates often intentionally ingest foreign objects for various motives. However, often, the reason for foreign body ingestion is not always as clear cut.
We report a 23-year old Caucasian male with history of mild intellectual developmental disorder who presented to the ED complaining of abdominal pain stating that he had swallowed 3 ink pens and 4 pencils. These objects were removed endoscopically and he was subsequently discharged. He presented to the ED 3 days later stating that he had ingested 3 pencils, 3 pens and a wrench which were again removed endoscopically. Two months later, he again presented to the ED complaining of abdominal pain after ingesting 8 pencils, and 2 razor blades. During that hospitalization, while under 1:1 supervision, he swallowed a fork off his meal tray. Three days after discharge, he was arrested for prior criminal offenses. While in jail he swallowed a spoon and during evaluation, reported he did it because he did "not belong there". He also endorsed visual hallucinations at that time and, once radiologic studies were negative, he was transferred to a long-term psychiatric facility. A day after transfer, he ingested 3 plastic tubes and 2 toothbrushes "to get the spoon out", all of which were successfully removed by a fourth endoscopic procedure. Over the course of 3 months, the patient had 6 hospitalizations, during which several approaches were tried to address his behavior including: consulting the Clinical Ethics Committee, appointing his mother as his legal guardian and both short-term and long-term psychiatric hospitalizations. During the course of his multiple hospitalizations, he was evasive during interviews, and had poor content of speech and thought. Most of ingestion occurred during a bet as per patient, but could not recall if he received payment. Toxicology screen revealed use cocaine and marijuana. The patient had several other episodes at different times, including swallowing metal screws and plastic spoons, all of which were removed by endoscopically. Differential diagnoses included Pica disorder, impulse control disorder exacerbated by substance use, factitious disorder, malingering for financial gain and attention and antisocial personality disorder.
Regardless of the cause, recurrent foreign body ingestions pose a significant challenge requiring multi-disciplinary approaches including medical, surgical, psychiatric and ethics services. Despite being aware of the risk of his actions, and utilizing interventions suggested in the literature including appointing a guardian and psychiatric hospitalizations, recurrent ingestions had continued.

**NO. 89**

**A NOVEL ADVERSE EFFECT OF GNRH AGONIST TREATMENT: DEPRESSION, ANXIETY, AND NOW, PSYCHOSIS? OH MY...**

*Lead Author: Renz J. Juaneza, M.D.*

**SUMMARY:**
GnRH agonists have long been a treatment for endometriosis, which affects 5.5 million women in the United States alone. Research has shown that the most common adverse psychiatric effects of GnRH agonists are depression and anxiety. Presented is a case of a psychiatrically healthy female with endometriosis who developed psychosis after GnRH agonist treatment, her symptoms distinct from the more prevalent depression and anxiety documented in previous studies. This case report clearly illustrates that psychosis can be an adverse effect of this class of drug and thus, screening and detailed discussion of possible psychotic side effects by the treating physician is warranted given the number of patients taking these medications.

**NO. 90**

**TO PEE OR NOT TO PEE? THAT IS THE QUESTION: A CASE REVIEW OF ALPRAZOLAM-INDUCED ACUTE URINARY RETENTION**

*Lead Author: Rajasekhar Kannali, M.D.*
*Co-Author(s): Waqar Rizvi, M.D., Howard Gottesman, M.D*.

**SUMMARY:**
Background: Alprazolam, Diazepam, Lorazepam, Clonazepam. These are but a few medications from the Benzodiazepine family that patients readily request / demand on a regular basis, likely by different names. They're not unlike other medications, in that they can cause a number of side effects. Some more concerning than others, and some more likely than others. Common side effects include sedation, dizziness, ataxia, confusion, respiratory depression, and even hyperexcitability / mania (albeit less common). A rare side effect not seen too often with some Benzodiazepines, is acute urinary retention. We will discuss such a case, with a patient who subsequently endure an episode of acute urinary retention, due to the use of Alprazolam.
Method: Case Report: We present the case of a 43 year old divorced, white female with a history of major depression who was admitted for bizarre behavior and paranoia, in the context of her divorce finalizing. The patient was found to be wandering aimlessly, with bizarre behavior, speech and affect. When admitted to the inpatient psychiatry unit, she was started on Risperidone 2 mg BID, in addition to her home medications of Escitalopram 10 mg daily and Alprazolam 0.25 mg TID. She was noted to be anxious, so her Alprazolam was increased to 0.5 mg TID. She was also experiencing some EPS symptoms of tongue swelling and akathisia. Therefore, Risperidone was decreased to 1 mg BID and Benztropine 1 mg BID was added. The patient later experienced acute urinary retention, and had abnormal liver function tests. Her Risperidone and Cogentin were discontinued, and Paliperidone 6 mg daily was started. The acute urinary retention persisted however. Medicine was consulted, and recommended a straight catheterization. Her Alprazolam was discontinued as well, as it was presumed to be the cause. A day and a half later, the patient began to void on her own accord. She was stabilized on Lorazepam 0.5 mg TID and Paliperidone 6 mg daily, and discharged accordingly with appropriate follow up.
Discussion: This case reminds us that patients can experience a wide array of side effects, with the wide array of medications they are on. Sometimes it may seem that a side effect isn't due to Drug B, but rather that it's due to Drug A. With efforts of treating these patients' side effects, we at times come to the realization that the side effect in question, is indeed due

to the unlikely medication, Drug B. This was such the case with this patient of ours, who suffered an episode of acute urinary retention due to the use of Alprazolam. As seen in this case, once ruling out other much more common causes (such as the use of anti-cholinergic medications), it is important to broaden our horizon and consider the unlikely medication (Alprazolam) as the possible culprit. Once stopping the offending agent, a straight catheterization may very well be necessary as well. Switching to another Benzodiazepine such as Lorazepam or Clonazepam is also an option.

**NO. 91**

**"LIVING IN A DREAM": DEPERSONALIZATION AS A SYMPTOM OF TEMPORAL LOBE EPILEPSY**

*Lead Author: Shitij Kapoor, M.D., M.P.H.*

**SUMMARY:**

Background: Depersonalization is defined as experiences of unreality, detachment or being an outside observer with respect to one's thoughts, feelings, sensations, body or actions. Depersonalization is one of the main symptoms of Depersonalization/Derealization Disorder. However, it also can manifest in other psychiatric disorders like Anxiety Disorders, Major Depression, and Schizophrenia. Depersonalization can also be drug induced or be a symptom of neurological disorders like Migraine, Multiple Sclerosis, Amyotrophic Lateral Sclerosis or Epilepsy, most commonly involving Temporal Lobe.

Method: Case Report: We report a case of a 29 year old female with history of Major Depression presenting with vague symptoms of not being able to concentrate at work and feeling of " living in a dream". Patient also presented with extreme anxiety and occasional panic attacks. Pt had a history of similar episode in the past when she was diagnosed with Major Depression 12 years ago and was successfully treated with Quetiapine and Imipramine. When she presented to our clinic, she had been off of all psychotropic medications for the past six years. Though, after psychotropic treatment was initiated she reported some improvement, she decompensated within months. Patient was later diagnosed with Temporal lobe epilepsy and her symptoms improved with the initiation of an antiepileptic regimen.

Discussion: Depersonalization is a common manifestation in many psychiatric disorders but tends to be missed as patient presents with vague description of the symptoms. Taking a careful detailed history along with thorough medical workup is of utmost importance prior to considering a psychiatric diagnosis as the basis for the depersonalization symptoms.

Conclusion: An accurate knowledge of the phenomenology of depersonalization symptoms and the associated diagnostic algorithms including medical causes is of much value to a practicing psychiatrist.

**NO. 92**

**ANTIGABA(B) ENCEPHALITIS PRESENTS AS PSYCHIATRIC SYMPTOMOLOGY AND SEIZURES IN A THEATER OF COMBAT**

*Lead Author: Erika M. Kappes, D.O.*
*Co-Author(s): Cody Rall M.D., Caroline Scacca M.D., Robert Perito M.D.*

**SUMMARY:**

Autoantibody mediated encephalitides are a group of heterogeneous disorders that can have both neurological and psychiatric manifestations. A growing number of patients who were once described as suffering from idiopathic limbic encephalitis have been found to have autoantibodies in serum and CSF. These include the group of diseases clustered together under the diagnosis of Paraneoplastic Limbic Encephalitis, and the list of known causative antibodies continues to expand as research progresses. More recently identified, anti GABAB receptor antibodies isolated from CSF and serum, can be associated with devastating encephalitis. These patients often exhibit prominent psychiatric and behavioral symptoms, accompanied by seizures, which in some cases progress to super-refractory status epilepticus, and even death. The time-dependent potential for successful treatment and remission of these disorders makes early recognition essential for both neurologists and psychiatrists.

This case involves a 24 year old soldier with a witnessed seizure in his barracks while deployed in Afghanistan. As the patient was moved to successively higher levels of care, and then evacuated from country for further treatment, he was in contact with his family by phone and text. Per his mother, his communications became uncharacteristically hostile, and then increasingly strange. He called her stating that he wanted to kill the entire family, and he seemed to have undergone "a complete personality change." As the patient was being medically evacuated through Landstuhl Regional Medical Center, in Germany, and on to Walter Reed Military Medical Center, in Bethesda MD, his seizures continued. Once back in the U.S., he began to exhibit increased confusion and agitation, and Video EEG monitoring was initiated. Shortly after he reached Walter Reed, his condition progressed to stupor, and he was found to be in status epilepticus. He was transferred to the intensive care unit, sedated and intubated. Control of the status epilepticus proved difficult, necessitating escalation of efforts to quiet the seizure activity and attain a "burst suppression" pattern on EEG. Over the course of 3 months, multiple treatments were used in an attempt to suppress seizure activity and a multitude of tests performed to elucidate the primary cause of the patient's presentation. A review of the literature suggested a presentation similar to autoantibody mediated limbic encephalitis, prompting empiric treatment with several immunosuppressant therapies including plasmapheresis and rituxumab. After weeks of treatment, the patient was found to have increasingly organized activity on EEG, and eventually could be weaned very slowly off sedation. During the course of the patient's recovery, CSF results returned positive for anti GABAB receptor antibodies.

**NO. 93**

**ATYPICAL PRESENTATION OF PEDIATRIC BIPOLAR DISORDER: A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Sonya N. Kaveh, M.D., M.S.*

**SUMMARY:**

Bipolar disorder in children historically presents atypically with difficulty regulating mood and erratic, explosive outbursts lasting minutes to hours. This is dissimilar from the classic adult symptoms of distinct mania and depression. It has been debated whether bipolar disorder in adults and children present similarly. Reported is a childhood case of bipolar disorder with distinct phases of mania with psychotic features, and depres-

sion, typical of adults. This case emphasizes that children can present with classic bipolar disorder. Long-term studies are needed to evaluate the course of illness in similar cases and furthermore, comparisons to atypical child presentations would clarify if the varied childhood presentations represent the same illness seen in adults.

**NO. 94**

**CASE REPORT ON POSTTRAUMATIC STRESS DISORDER AFTER DOG ATTACK IN ADULT**

*Lead Author: Asif H. Khan, M.D.*
*Co-Author(s): Bakul K. Parikh, M.D., Dushyant Trivedi, M.D.*

**SUMMARY:**

Introduction: Posttraumatic stress disorder (PTSD) has been described as the complex somatic, cognitive, affective, and behavioral effects of psychological trauma. In this case we are presenting an adult male without any previous history of psychiatric illness, who developed PTSD after being attacked and bit by dog. This case is interesting as PTSD after dog attack has been reported in children, but underreported in adults.
Case description: A 53 year old Middle Eastern male with no past psychiatric history came with chief complaints of sleep disturbance and severe anxiety of one month duration after being attacked and bit by dog. On evaluation patient admitted to have severe sleep disturbance due to frequent nightmares with severe anxiety on awakening. It was associated with panic attacks on going out in public, flashbacks of the event, chronic worry, and avoidance of dogs in neighborhood. The symptoms were uniquely severe in intensity to an extent that he was becoming housebound, lost his job and withdrawn from public places. He started using crutches as a safety measure, which he called his "guns." He fulfilled the DSM IV-TR diagnostic criteria for PTSD, treatment was initiated with fluoxetine, prazosin, clonazepam and cognitive behavioral therapy. Trazodone was added subsequently for his continued residual symptoms. Later on, psychodynamic oriented supported psychotherapy was instituted to assess his fears related to the incident. The patient responded to the treatment and after about a year, was finally able to start working again on part time basis.
Discussion: This case illustrates the potential of developing PTSD in adults after dog attack and the severity of the symptoms was unique after exposure to common household pet. Also early recognition and proper management of the disorder can help reduce the morbidity due to the disorder. PTSD in adults after dog attacks has been underreported, and a more detailed study is needed.

**NO. 95**

**PSYCHOTIC EPISODE SECONDARY TO METRONIDAZOLE USE**

*Lead Author: Mili Khandheria, M.D.*
*Co-Author(s): Erica Snook, M.D., Christopher Thomas, M.D.*

**SUMMARY:**

Objective: Psychosis is a well-known but often forgotten side effect of many commonly prescribed medications, specifically antibiotics. Dizziness, tremors, and hallucinations are the most common adverse effects of antibiotics and occur in a small but significant percentage of individuals with the use of antibiotics.
Method: A case of psychosis is presented in a twenty-seven year old female related to metronidazole treatment for bacterial vaginosis along with a review of the possible mechanisms of actions that could potentially cause this adverse side effect.
Results: The onset of psychosis appeared to coincide with the use of metronidazole and the resolution of symptoms occurred within two days after the discontinuation of metronidazole.
Conclusions: Clinicians should be aware of the possibility of medication-related psychosis in the acute care setting.

**NO. 96**

**A CASE OF CEREBELLAR ATAXIA WITH AFFECTIVE INSTABILITY AND PERSONALITY CHANGES**

*Lead Author: Anbreen Khizar, M.D.*
*Co-Author(s): Noel Baker, M.D., Mahreen Raza, M.D., Samuel O. Sostre, M.D*

**SUMMARY:**

Purpose: The emergence of affective symptoms in Purpose: The emergence of affective symptoms in a patient with no prior psychiatric history should prompt a search for secondary causes. The cerebellum has traditionally viewed as involved only in coordinating motor activity. However, evidence is convincing that the cerebellum has relationship with cognitive and emotional circuits in the brain. Over the last several decades reports of affective and cognitive symptoms associated with cerebellar dysfunction have been published. The presence of these psychiatric symptoms in context of cerebellar disease has been called the Cerebellar Cognitive Affective Syndrome.
Methods: We present a case of suspected Cerebellar Cognitive Affective Syndrome in a patient with cerebellar ataxia without pre-existing psychiatric illness.
Results: A 79 year-old Caucasian name with no personal or family history of psychiatric illness presented for outpatient psychiatric evaluation from primary care physician because he was noted to have emotional lability. While it was difficult to obtain a logical and coherent history because he exhibited disorganized thought process, during interview he endorsed some panic symptoms but denied all depressive, manic and psychotic symptoms or the use of any substances. On examination, he was noted to appear anxious and demonstrated affective lability ranging quickly from laughing to crying inappropriately. He was frequently flirtatious with female members of the treatment team. As a collateral informant, the daughter described symptoms have been chronic and that patient was at, or near baseline psychiatrically.
The patient was admitted several months after initial evaluation for frequent falls attributed to progression of cerebella ataxia. Psychiatric consultation was consistent with outpatient evaluations and patient was discharged to a nursing home.
Conclusions: The cerebellum has traditionally been thought to be associated with motor movements, gaits and posture only. There is an increasing body of evidence that suggests that the cerebellum is also involved in cognitive processing and emotional control. The term cerebellar cognitive affective syndrome (CCAS) was coined by Schmahmann and Sherman in 1998 and refers to the mental and behavioral alterations unrelated to motor deficits observed in patients with severe cerebellar lesions. The cerebellar cognitive affective syndrome can lead to impairments in executive abilities in addition to affective disturbance which ranges from depression, personality changes to disinhibition and psychotic features. Through our case presentation we want to increase awareness about Cere-

bellar Cognitive Affective Syndrome in the medical community. Additionally, we want to educate medical professionals about conducting a thorough evaluation of patients who present with psychiatric symptoms due to the possibility of underlying medical illnesses which may go undiagnosed otherwise.

**NO. 97**

**SUDDEN ONSET OF NEUROLEPTIC MALIGNANT SYNDROME (NMS) WITH ADDITION OF AN ANTIBIOTIC TO LONG-STANDING ANTIPSYCHOTIC TREATMENT**

*Lead Author: Tamkeen Khurshid, M.D.*
*Co-Author(s): Hilary Hanchuk, M.D, Najeeb Hussain, M.D*

**SUMMARY:**

Abstract
Neuroleptic malignant syndrome (NMS) is a feared potentially life threatening condition occurring as a result of use of antipsychotic medications. NMS is typically characterized by muscle rigidity, fever, autonomic instability, alteration in cognition, behavior disturbances or coma, along with laboratory studies revealing elevated plasma creatine phosphokinase. We present a case of NMS in a patient on longstanding treatment with chlorpromazine for schizophrenia induced by addition of azithromycin to treat a minor upper respiratory infection.
Methods: Case presentation, hospital EMR and literature review
Abstract:
Ms. VM is a 45 year old Caucasian female with a lifetime psychiatric history of severe schizoaffective disorder and cognitive disorder NOS (secondary to brain anoxia).This patient has a longstanding history of being treated with chlorpromazine and several other psychotropics including sertraline, topiramate and trazodone. She developed minor community acquired upper respiratory symptoms and was started on azithromycin. In one day the patient exhibited a minor stoop in her posture. In two days the chlorpromazine and azithromycin were discontinued. In three days the clinical presentation was of muscle rigidity manifested by a severe stooped posture, no extremity rigidity, increased agitation, low grade fever, CPK levels of 4290 and elevated transaminases. As a result the remaining psychotropics were discontinued. She was treated with supportive therapy including fluids and briefly with bromocriptine with resolution of symptoms and laboratory values.
Discussion: Neuroleptic malignant syndrome is a life-threatening adverse reaction associated with psychotropic medications. Literature review indicates pharmacokinetic interactions including macrolides, among other antibiotics, has shown to cause elevated levels of psychotropic drugs through inhibition of the hepatic cytochrome P450 enzyme system. Reports have been published of azithromycin interactions with simvastatin causing rhabdomyolysis. Therefore, macrolides, especially the commonly prescribed azithromycin use with antipsychotics such as chlorpromazine, as we present in the this case, should be taken into consideration in the light of inducing a life threatening adverse reaction, NMS.
Conclusion: Neuroleptic malignant syndrome is possible with any psychotropic medication. However, in this case report we emphasize that caution should be practiced when introducing macrolides, in particular, azithromycin in the background of long standing chlorpromazine. Changes in motor function such as even minor changes in posture must alert the clinician. Further investigations are needed to study and explore the interactions of macrolides with psychotropics relating with development of NMS.

**NO. 98**

**COMPARISON BETWEEN CHILDREN WITH AND WITHOUT AUTISM SPECTRUM DISORDERS WHO PRESENT AT THE COMPREHENSIVE PSYCHIATRIC EMERGENCY PROGRAM: A PILOT STUDY**

*Lead Author: Ah Young (Nora) Kim, M.D.*
*Co-Author(s): Daniel Antonius, Ph.D., Victoria Brooks, M.D., Michael Cummings, M.D., Howard Soh, MSII, Calvert Warren, M.D.*

**SUMMARY:**

Background: According to data released by the Autism and Developmental Disabilities Monitoring Network, approximately 1 in 88 children are diagnosed with Autism Spectrum Disorders (ASD). Annually, approximately 1 in 30 children will present to emergency rooms in the U.S. for acute psychiatric care. Additionally, children with ASD are significantly more likely to be treated for emotional, developmental, and behavioral problems than other children.
Recent reports have emphasized the need for improved psychiatric crisis care services for children in Western New York. Currently, however, little is known about the prevalence of children with ASD in Western New York psychiatric emergency rooms, the problems they present with, and the treatment and care they receive.
The Comprehensive Psychiatric Emergency Program (CPEP) at Erie County Medical Center (ECMC) is the only 24-hour psychiatric emergency program in Western New York. This program sees annually approximately 2000 children who are in acute crisis.
Giving the increasing need for better understanding the myriad of factors children with ASD may present with when in acute crisis, we proposed to study retrospectively a cohort of children who were admitted to CPEP.
Methods: Our study analysis was based on a subsample (N=2032) of the Electronic Medical Record database of ECMC. Initial assessments of corresponding 2032 visits of 1578 subjects below age 19 who presented to ECMC's CPEP from 9/01/2011 to 9/01/2012 were analyzed.
Descriptive statistics of demographic, and psychosocial factors, as well as presenting symptoms, past clinical history, care and treatment were computed through SPSS Statistics to compare ASD with non-ASD patients who presented to CPEP.
Results: The prevalence of children and adolescents diagnosed with ASD who presented to CPEP was 3.2%, predominately male compared to non-ASD patients ($x^2=35.012$, $p<.0001$), with a mean age of 13.34 (SD=3.36, $t(1576) = -2.775$, $p=.008$). The ASD group showed higher prevalence of aggression ($x^2=24.07$, $p<.0001$), and lower prevalence of substance use ($x^2=6.945$, $p=.008$). Cognitive impairment ($x^2=146.152$, $p<.0001$) was more likely to be comorbid among ASD patients, and no significant discrepancy was found on self-injurious behavior, suicidal ideation, mood symptoms, and psychosis between groups. The ASD group was more likely to have previous admissions ($x^2=21.776$, $p<.0001$), and outpatient treatment history ($x^2=20.562$, $p<.0001$), and less likely to have a history of trauma ($x^2=5.292$, $p=.021$) than the non-ASD. Length of stay difference between the two groups was non-significant, and new

outpatient referrals were more likely to be made for non-ASD children (x2=14.035, p=.0009).
Discussion: We consider this pilot study is of significant value to characterize the children population admitted to CPEP, particularly those with ASD, to better understand the current use of the CPEP services, and serve as base for improvements in patient care.

**NO. 99**

**CHARACTERISTICS OF WORKING MEMORY PROCESSES IN EUTHYMIC PATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Jiyong Kim, M.D.*
*Co-Author(s): Su Jin Lee, MA. Hyeon Sook Ryu, MA.,Vin Ryu MD, PhD.,Hyun-Sang Cho, MD, PhD.*

**SUMMARY:**

Objectives:
Patients with bipolar disorder may have trait-like impairment in working memory (WM) which may be affected by attentional deficits. Processing components of maintenance and manipulation of internal representation can work in WM performance. Recently, impaired maintenance and spared manipulation of representation in WM was found in schizophrenia patients. We investigated the characteristics of working memory performances in euthymic patients with bipolar I disorder.
Methods:
Twenty euthymic bipolar patients and 32 normal control subjects were recruited and diagnostically evaluated by Mini-International Neuropsychiatric Interviews. To measure manipulation and maintenance processes of working memory, two mental rotation tasks (people rotation and letter rotation) and spatial delayed response task (DRT) were used.
Results:
There was no difference in accuracy rates between bipolar patients and normal controls group on spatial DRT for passive maintenance process. On both mental rotation tasks for the active manipulation processes, no significant differences were found in error rates between the two groups. Although there was a main effect of group in reaction times in both tasks, there were no group interactions with letter orientation or angle of rotation in letter rotation, and instruction, perspective or arm position in people rotation.
Conclusion:
These preliminary results suggest that WM performances as well as both active manipulation and passive maintenance of representations during WM might be intact in euthymic patients with bipolar disorder. Bipolar I patients with normal mood status might be different from schizophrenia patients, who show impaired maintenance and spared manipulation of representations, in the processes of WM.
KEY WORDS: Working memory, mental rotation, manipulation, maintenance, bipolar disorder

**NO. 100**

**SYMPTOM VALIDITY AND PCL-M SCORES IN SERVICE MEMBERS WITH MTBI AND COMORBID DISORDERS IN AN INTERDISCIPLINARY INTENSIVE OUTPATIENT TREATMENT PROGRAM**

*Lead Author: Eric Kinsman, M.D.*
*Co-Author(s): Joseph Bleiberg, Ph.D., Jesus J. Caban Ph.D., Thomas J. DeGraba, M.D., Geoffrey G. Grammer, M.D., Vanessa R. Green, D.O.*

**SUMMARY:**

Introduction: The purpose of this study is to examine the characteristics of those patients who report worsening PTSD symptoms while undergoing treatment at a four week intensive outpatient program with an interdisciplinary care model. Patients referred to the National Intrepid Center of Excellence (NICoE) have failed to improve despite standard community-based interventions and are referred from throughout the military healthcare system. Although most patients report improvement with treatment, a minority have an increase in their PTSD Check List-Military (PCL-M) score which should reflect an increase in PTSD symptoms.
Methods: Patients enrolled in the NICoE completed the PCL-M on the first and last week of their treatment. Under an IRB-approved protocol, patients were identified who had at least a 10 point increase in their PCL-M score and a chart review was conducted to identify common characteristics. Demographic factors as well as results from psychological testing and clinical notes were reviewed and compared to randomly selected subgroups of 10 patients with no change in PCL-M and 10 patients with decrease in the PCL-M score.
Results: Of 297 cases available for study, 11 (4%) reported a worsening of PCL-M score by 10 points or greater. Six (54%) of these patients had invalidated effort testing on their neuropsychological battery. Four (40%) patients with no change in PCL-M showed invalidation on effort measures. Two patients (20%) who improved in their PCL-M had invalidation on effort testing.
Discussion and Conclusion: Deterioration of PCL-M score was extremely rare in this treatment program. Of those that reported worsening of symptoms, 54% had invalid performance on formal effort testing, compared to just 20% of those whom improved. Clinicians using the PCL-M to monitor treatment progress should consider the potential influence of effort and symptom validity on PTSD reported severity.

**NO. 101**

**GLOBAL MENTAL HEALTH TRAINING DURING PSYCHIATRIC RESIDENCY**

*Lead Author: Sarah Reed, M.D.*

**SUMMARY:**

Increasing rates of international travel, migration, and globalization have created medical communities that are both diverse in their patient need and continuously evolving intercultural conceptualizations of health and disease. U.S. medical residents are training in multicultural and multiethnic communities, where understanding global epidemiology of disease and the disparities in global health systems are important even for domestic medical care. Echoing this trend towards multinationalism in patient populations, there is growing resident interest across all specialties to have global health training and international clinical experiences during residency. Nearly all medical schools have incorporated some form of global health teaching into their curricula and 25% of U.S. medical school graduates enter residency with some international health experience. Residency, however, can be an even more useful time for international medical training than medical school, since trainees have developed a clinical context of diseases and have a larger skillset to participate in a variety of global clinical contexts. While there is certainly a need for training in global health and

widespread interest among residents for international training opportunities, there is a shortage such training opportunities in residency programs, especially in psychiatry and mental health. This poster examines the opportunities that are available, as well as the importance of and ethics around establishing these types of training experiences.

**NO. 102**

**PSYCHOSIS FOLLOWING RIGHT TEMPORAL LOBE TUMOR RESECTION AND RECURRENCE**

*Lead Author: Bassem Krayem, M.D.*
*Co-Author(s): Norma R. Dunn, M.D*
*Ronnie G. Swift, M.D*

**SUMMARY:**

There are many psychiatric illnesses associated with structural brain abnormalities(1, 2, 3, 4). Psychiatric symptoms and intractable seizures can present as a result of temporal lobe tumor. (1, 2, 4).

We present a case of an 11 year old female with three psychiatric admissions starting at age nine. Admissions were the result of self-injurious behavior by cutting herself superficially with a razor blade in response to command auditory hallucinations. During her recent admission, Quetiapine and Valproic acid were started and her psychosis was controlled. She was discharged home to the custody of her mother.

Her medical history reveals Astrocytoma of the right temporal lobe diagnosed at age two. The tumor resulted in intractable seizures and she was started on Carbamazepine followed by surgical resection at age three. Since then, she had no reported seizures and recent EEG (electroencephalography) was normal. Subsequent MRI (magnetic resonance imaging) at age seven showed abnormality in the hypothalamus. She developed puberty at age eight and was started on long-acting Leuprolide monthly. Hypothyroidism and pre-diabetes developed and she began treatment with Levothyroxine and Metformin.

Neuropsychiatric testing of her verbal IQ showed a decline from her initial testing at age nine and she was placed in a special education program for severely impaired. Recent MRI showed tumor progression in the frontal, temporal and hypothalamic region with loss of a large part of the inferior temporal lobe. Her oncologist started chemotherapy to control tumor progression. Follow-up MRI showed no changes in tumor size after two cycles.

Discussion.

Our case report shows that presentation of psychosis, endocrine abnormalities and academic decline parallels the recurrence and progression of her brain tumor. Initial diagnosis of a temporal lobe tumor coincides with her presentation of intractable seizures. Although resolved with surgery, she developed hallucinatory symptoms later on from tumor recurrence and/or gross right temporal lobe brain tissue loss (1, 4). Right side temporal lobe surgery has been reported to have a higher incidence of subsequent psychosis than left temporal lobe surgery as shown in our case (1).

**NO. 103**

**PROVIDING CULTURALLY SENSITIVE CARE TO A TEENAGE PATIENT WITH PSYCHOSIS AND CATATONIA**

*Lead Author: Gaurav A. Kulkarni, M.D.*
*Co-Author(s): Balkozar, Adam, M.D.*

**SUMMARY:**

Background

The impact of culture in psychosocial development has long been studied. Erik Erikson in his work on psychosocial stages highlighted the contributions from a biological and psychosocial standpoint [1]. We believe culture plays a key role in the developmental stages and the understanding of one's own illness. We discuss a patient who presented with psychosis and catatonia.

Case

The patient is a 16-year-old Muslim female was brought to the emergency room by her parents with concerns of her not eating, sleeping or speaking for last 3 days. They moved from Somalia to the United States about 6 months ago as refugees. Since then, they reported that her personality has changed and described her as "odd and irregular." There is no history of sexual or physical abuse; she denied having any depressive, anxiety, psychotic or manic symptoms.

Results

During 1st day at the hospital, she appeared confused and mumbled to self. She was pacing at times on the unit and spent most of the time standing up. On 3rd day, she complained of hearing voices; said she couldn't sleep because of voices. She seemed paranoid, was noticed looking around and not responding to any questions. Aripriprazole 1 mg daily was started, which was titrated up to 2.5 mg q daily. Lorazepam 0.5 mg bid was also added to help with the anxiety.

Discussion

Many refugee children experience adverse psychological outcomes during the resettlement period [2]. When delivering mental health services to immigrants, research reflects the importance of providing culturally sensitive care. For our patient, we were able to connect her with a mental health worker who is a first-generation immigrant and who shares some of the same cultural and religious beliefs. She was able to communicate, establish rapport in a non-judgmental way and showed the patient that she respected her values and beliefs. All of this helped the patient and her family overcome a sense of shame they said they initially felt when their daughter was involuntary admitted. In addition, they were able to trust the diagnosis and the treatment, which included the use of medication – something they had never tried before.

The patient's refusal to eat the hospital food sparked a health concern. She lost weight and had low potassium, so a Muslim dietitian was called in. The patient began by eating prepackaged food in sealed containers to help with her paranoid thinking. With time, she was able to trust the staff and eat the hospital food. To continue providing culturally sensitive care, the patient was assigned a Muslim psychiatrist for outpatient follow-up.

Conclusion

This case illustrates the diagnostic and treatment selection challenges in providing culturally sensitive care for patients with mental health issues, as well as cultural and language barriers. Considering the dearth of data, continued reporting of cases will be useful in understanding the complexities in tailoring care.

**NO. 104**

**PSYCHOSIS VERSUS OBSESSION: A CHALLENGING CASE OF A**

**PREGNANT WOMAN HEARING VOICES**

*Lead Author: Priya Kumar, M.D.*
*Co-Author(s): Pankaj Lamba, MD, Naga Kothapalli, MD and Nabila Farooq, MD*

**SUMMARY**:
Case Report: A 22-year-old 15 week pregnant female with h/o schizophrenia not taking meds presented with bizarre thoughts and behaviors. She reported hearing multiple voices that were telling her to molest kids which started after she was taken off the psychotropic medications due to pregnancy. She demonstrated an inability to sit still and was constantly moving or rocking while sitting. She was admitted to inpatient and was treated for an exacerbation of schizophrenia with haloperidol which was titrated to 1mg BID. She was discharged and readmitted 4 days later with similar intrusive thoughts of wanting to molest kids but this time with a compulsion of falling on the floor in response to such thoughts. These thoughts were ego dystonic thoughts and her bizzare actions helped her to relieve the anxiety. She mentioned no intentions to molest kids and her actions of falling or banging the head was a distraction to her thoughts. During the 2nd admission Obsessive Compulsive Disorder (OCD) was considered as a differential and she was evaluated further with Y-BOCS. Her symptoms were in moderate catagory. Fluoxetine 10mg QD was added to haloperidol. She responded to this combination treatment and within a week showed an improvement of obsessive thoughts, and was able to stop the compulsive behavior.
Discussion: The purpose of presetting this case is: i) To demonstrate challenges in diagnosis when patients have co-morbid psychiatric diagnoses. The challenge in this case was difficulty in distinguishing the new voices were an OCD symptoms and not an exacerbation of schizophrenia. On the other hand, it is still yet to determine whether OCS are manifestations of co-morbid OCD or they are characteristics of a distinct subtype of schizophrenia that can surface from time to time. ii) To our best knowledge there is no case report of a pregnant patient with comorbid schizophrenia and OCD.
We did a literature search to better understand the relationship between OCS in schizophrenia and in pregnancy. OCD and schizophrenia coexist more often than one would expect, based on the illnesses' separate lifetime prevalence rates (1% to 1.5%) for schizophrenia, 2% to 3% for OCD. Several studies have identified a significant prevalence of OCS in schizophrenia, in some studies up to 50% rate. Similarly, pregnancy and childbirth are frequently associated with the onset of OCD or worsening of symptoms in those with preexisting disorder. A recently published meta-analysis showed an increase in OCD prevalence across pregnancy and the postpartum period with the lowest prevalence in the general population (mean = 1.08%) followed by pregnant (mean = 2.07%) and postpartum women (mean = 2.43%).
References: 1) Risk of obsessive-compulsive disorder in pregnant and postpartum women: a meta-analysis. J Clin Psychiatry 2013. 2) Preferential aggregation of obsessive-compulsive spectrum disorders in schizophrenia patients with obsessive-compulsive disorder. Can J Psychiatry. 2006.

**NO. 105**

**TO REPORT A CASE OF MEFTAL SPAS- (MEFENAMIC ACID, DICYCLOMINE) INDUCED PSYCHOSIS.**

*Lead Author: Reena Kumar, M.D.*
*Co-Author(s): Jonathan C. Findley, M.D., Dharmendra Kumar,M.D.*

**SUMMARY:**
Case Summary:
We present the case of a 24-year-old Indian female without prior psychiatric history who was hospitalized for the sudden onset of psychotic symptoms (bizarre behavior, hallucinations and paranoid ideation) after accidental overdose with Meftal Spas (a common over-the-counter remedy for menstrual pain in India). Medical workup and toxicology were without significant findings.
Conclusion:
We report an uncommon but serious psychiatric adverse reaction from a common menstrual pain remedy in India. Meftal Spas and its possible psychiatric side effects are likely unfamiliar to most physicians in the United States. Psychiatrists and their patients of Indian descent may benefit from a heightened awareness of this possible drug reaction.

**NO. 107**

**DISSOCIATIVE IDENTITY DISORDER (MULTIPLE PERSONALITY DISORDER): A CASE REPORT WITH EVIDENCE**

*Lead Author: Pankaj Lamba, M.D.*
*Co-Author(s): Bakul Parikh, M.D.*

**SUMMARY:**
Case Report: A 50-year-old woman presented after two years to our clinic with complaint, "I ran out of medications 2 weeks back; I'm feeling depressed and scared, the voices are constantly arguing with me." Auditory hallucination was described as, "Kim is constantly arguing with me." She viewed her as a separate person with a different personality than hers. No other hallucination, delusion, thought disorder were evident. She endorsed symptoms of depression, anhedonia, hopelessness, sleep disturbance, suicidal thoughts. She also reported a suicide attempt, "A few months back, I tried to shut down 'her voice' by stabbing 'the body' with a knife." As per records from our clinic, she was diagnosed with affective disorder with psychotic features and treated accordingly. Mention of Kim was found in some notes and was explained as psychotic thought process. The psychiatrist at other clinic was treating her for Schizophrenia with chlorpromazine and risperidone.
The differential diagnoses were Schizoaffective Disorder, Major Depressive Disorder with Psychotic features, and Dissociative Identity Disorder (DID). She was restarted on meds and referred to a therapist familiar with dissociative disorders. The therapy brought forward more material including the names of two adult alternate identities which frequently engaged in arguments and a little girl alter who was sad and miserable. The therapist had encouraged her to write or draw to help her get in touch with her thoughts and feelings. Interestingly, she wrote journal pages, in two predominantly different handwritings. These entries recorded the inner dialogue between two adult alters who often identified themselves. She also loved drawing and would sign these with the alter name who was expressing herself.
Discussion: We diagnosed DID NOS as per DSM IV-TR. The drawings and pages from journal provide substantial proof of existence of the alternate personalities of our patient.

This case also demonstrates several key features related to DID: 1) these patient present with many first-rank Schneiderian symptoms, such as audible thoughts, voices arguing with each other, which were considered to be pathognomonic of schizophrenia. 2) dissociative alterations in identity may be manifested by patients referring to themselves using their own first names or make depersonalized self-references, such as "the body," when describing themselves and others. 3) the personalities often attempt to influence the behavior of the personality who is in-charge of the body without emerging overtly and seizing control in purportedly "classical" fashion. 4) the patients may report strong affects or impulses that they experience without a sense of personal ownership, but with a peremptory sense of intrusion and control. The patients generally do not have explanations for these experiences and may feel confused, puzzled.

Reference: Guidelines for treating dissociative identity disorder in adults. J Trauma Dissociation. 2011.

**NO. 108**

**CHARACTERISTICS OF ELDERLY PATIENTS WHO HAVE ATTEMPTED SUICIDE BY SELF-POISONING**

*Lead Author: Jai Young Lee, M.D.*
*Co-Author(s): Seung Young Oh, M.D., Chanmin Park, M.D., Geon Ho Bahn, M.D., Ph.D., Jin Kyung Park, M.D., Ph.D.*

**SUMMARY:**

Characteristics of the elderly patients who have attempted suicides by intentional self-poisoning
Jai Young Lee, MD1, Seung Young Oh, MD1, Chanmin Park, MD1, Geon Ho Bahn, MD, PhD1, Jin Kyung Park, MD, PhD2
1Department of Neuropsychiatry, School of Medicine, Kyunghee University, Kyunghee University hospital, Seoul, Korea
2Department of Neuropsychiatry, School of Medicine, Kyunghee University, Kyunghee University hospital at Gangdong, Seoul, Korea
Objectives: Recently, there has been an increase in elderly patients attempting suicide by self-poisoning. This issue is a recently emerging social problem. This study investigated the clinical aspects of the elderly patients who have attempted suicides by intentional self-poisoning.
Method: We performed a retrospective analysis of 35 patients over 65 years old, who have been hospitalized in KyungHee University Hospital at Gangdong and received psychiatric consultation after suicide attempts by intentional self-poisoning from June, 2006 to May, 2013. We investigated demographic and clinical characteristics according to gender difference and also analyzed types of substance used for self-poisoning, impulsivity of suicide and types of admission.
Result: In the two different gender groups, there was a significant difference in seasonal variation and types of substance for self-poisoning. In the male group, the number of suicide attempts was highest in spring (p=0.004), while the female group showed relatively even seasonal distribution. In terms of type of substance, the male group tended to use more harmful substance than the female group (p=0.004). Many psychiatric problems co-existed in patients regardless of gender, and depression was the most common disorder.
Conclusion: In our study, male patients has a tendency to use more harmful substance than female patients when attempting suicide by self-poisoning, which would lead to a more fatal situation. Also, early psychiatric consultation would be helpful in managing depression in the early stage and thus help reduce suicide rates in elderly patients.
KEY WORDS Suicide · Poisoning · Elderly

**NO. 109**

**THE COGNITIVE EYE TECHNIQUE IN ACUTE ANXIETY REDUCTION**

*Lead Author: William W. Lee, M.D.*
*Co-Author(s): Frederick W. Brown, M.D.*

**SUMMARY:**

Objectives: To report preliminary benefits of the Cognitive Eye Technique (CET) for the treatment of acute anxiety in patients hospitalized on an inpatient veterans' psychiatry unit. We present the results of a case series (n=5 consecutive cases) who underwent the intervention as a function of routine clinical care.
Background: The Cognitive Eye Technique is a 10 minute behavioral intervention that may provide reduction in anxiety toward specific stressful situations. Originally theorized by Allen C. Sargent, the technique is based on principles of hemispheric emotional processing during which reduction in anxiety is achieved by re-imagining a stressful situation while utilizing the cognitive eye and masking the non-cognitive, emotional eye.
Case Description: Five psychiatry inpatients with acute anxiety were asked to think of a current or past situation that persistently causes a significant amount of anxiety. Patients were asked to rate the experienced anxiety from 0-100. Hand and eye dominance of each patient was recorded, and the cognitive eye was determined by the examiner. Patients were then asked to re-evaluate the stressful situation while using their cognitive eye. Four of the patients reported acute anxiety reduction when the emotional eye was masked and the cognitive eye was exposed. The fifth patient reported no change to his anxiety levels after CET.
Conclusion: The Cognitive Eye Technique is an easily taught stress reduction intervention that may reduce anxiety. Formal clinical trials establishing efficacy and further research regarding the neurobiology of the technique are warranted as the concept of hemispheric emotional processing is minimally understood.

**NO. 110**

**LITHIUM-INDUCED NEPHROGENIC DIABETES INSIPIDUS AFTER GASTRIC BANDING**

*Lead Author: Joshua R. Leo, M.D., M.P.H.*
*Co-Author(s): Helen M. Farrell, M.D., Rohn Friedman, M.D.*

**SUMMARY:**

Nephrogenic diabetes insipidus (DI) is a known complication of lithium therapy, and patients affected by this disorder are highly vulnerable to hypernatremia when they cannot respond to their thirst mechanism, such as during the postoperative period. Bariatric surgery, gaining in popularity as a treatment for morbid obesity, is associated with major disturbances to patients' fluid balance and can result in disastrous consequences to the patient with DI. We report a case in which the diagnosis of lithium-induced nephrogenic diabetes insipidus (LINDI) evaded the primary team at a general hospital due to the remoteness of the lithium treatment and lack of classic symptomatology, such as polyuria and nocturia. The consult

psychiatrist's identification of LINDI in a postoperative patient with erratic behaviors, polydipsia, and altered mental status led to life-saving interventions. This case underlines the importance of integrated care for bariatric patients.

**NO. 111**

**CASE REPORT: EFFICACY OF TRAZODONE AS TREATMENT FOR AGITATION AND POOR SLEEP IN AN 86-YEAR OLD MALE WITH DEMENTIA**

*Lead Author: Joanna C. Lim, M.D.*
*Co-Author(s): Dr. Paul J Goodnick, M.D. (Staff psychiatrist at the Veterans Affairs Medical Center in Washington DC)*

**SUMMARY:**

The case report discusses the response of Mr. B, an 86-year old Caucasian male who was recently diagnosed with Dementia NOS per DSM-IV-TR criteria, to trazodone for agitation and poor sleep. Presently, typical and atypical antipsychotics are the most widely prescribed medications to treat agitation, delusions, hallucinations and aggression in patients with dementia despite its modest efficacy and high frequency of adverse effects. Side effects include a black box warning of increased mortality risk in elderly dementia patients, weight gain, anticholinergic effects, increased cardiovascular risk leading to death, and worsening cognitive function. As a result, antidepressant medications such as trazodone have been suggested as possible alternatives due to its low rate of side effects and belief that some behavioral and psychological symptoms of dementia are related to serotonergic dysfunction.

Mr. B initially presented to us at the Veterans Affairs (VA) Medical Center in Washington DC for agitation and poor sleep after being switched to risperidone a week prior. Risperidone was resumed initially at this current hospitalization but eventually discontinued after it was found that Mr. B responded better to trazodone. At a dose of 25mg in the morning, 25mg at noon and 75mg at night, Mr. B's nighttime sleep and outbursts of agitation improved significantly. At this regimen, he received less to eventually no PRN medications for agitation and physical restraints were not required while on the psychiatry inpatient unit.

An A-B-A design analysis reveals the usefulness of trazodone. During his hospitalization, he required two transfers off of the psychiatry inpatient unit for evaluation of new-onset chest pain and hematemesis. On both transfers, his psychiatric medications were revised. On the first transfer, trazodone was reduced, and quetiapine and low dose haloperidol PRN were added. During his 4-day stay, he received 1 dose of haloperidol 0.2mg by IV and placed on physical restraints for nighttime agitation. Similarly, during his second transfer to the medical unit, he received olanzapine 2.5mg twice and haloperidol 1mg twice by IM for agitation as well as physical restraints over his 4-day stay. When he returned to the psychiatric inpatient unit both times, his scheduled antipsychotics were never used and eventually discontinued. His trazodone regimen was resumed and Mr. B did not require PRN medications for agitation or physical restraints.

Although it is evident that Mr. B responded well to trazodone, other factors might have contributed to his positive response that will be discussed further in the report. In addition, adverse effects related to trazodone will also be reviewed. For example, serial EKGs were ordered to monitor for QTc prolongation. Lastly, results from the review of trazodone for agitation by the Cochrane Collaboration will also be examined and analyzed in relation to the case.

**NO. 112**

**ALCOHOL WITHDRAWAL TREATMENT IN THE MEDICALLY COMPLICATED PATIENT: COMPARISON OF SYMPTOM-TRIGGERED TREATMENT WITH OTHER DETOXIFICATION METHODS**

*Lead Author: Austin Lin, M.D.*
*Co-Author(s): Grace Chang, M.D., Janet Shu, M.D.*

**SUMMARY:**

Introduction: Alcohol use disorder is a significant problem in the U.S. with 129 million current drinkers, 23.3% reporting binge drinking, and 6.9% reporting heavy drinking [1]. Unhealthy alcohol use is associated with serious medical illness [2] and complicated hospital stays [3]. Since 20-50% of hospitalized patients report alcoholism [4], and 42% of veteran inpatients have required medications for detoxification [5], optimizing alcohol withdrawal treatment is a clinical priority. Benzodiazepines are first-line for symptom management and prevention of delirium tremens and seizures [6], but its optimal administration remains controversial. Studies comparing different methods (symptom-triggered, fixed-dose, or loading) include their exclusion of medically complicated, psychiatric, or multi-substance abusing patients thus limiting generalizability of findings [7]. This study compares the outcomes associated with symptom-triggered treatment and other strategies of benzodiazepine administration without any exclusion criteria. Methods: A retrospective chart review of 49 veterans consecutively admitted to a tertiary veteran's medical hospital for alcohol detoxification. Demographics, blood alcohol level (BAL), Charlson comorbidity index (CCI), drinks per drinking day, pre-psychiatry consult benzodiazepine administration, and length of stay were compared for veterans who developed complications versus those who did not. Results: 19% patients experienced significant complications during their medically managed detoxification, including behavioral dyscontrol and delirium tremens. Compared to veterans without such complications, these patients tended to have more drinks per drinking day and a higher proportion received benzodiazepines prior to consultation (23.8 versus 16.6,p=0.11 and 78% versus 53%,p=0.10, respectively). The groups did not differ with respect to age, admission BAL, CCI, or length of stay. Conclusion: Patients who reported higher drinking amounts were more likely to have behavioral and/or medical complications. This may help physicians to triage patients to higher levels of care (ICU or PCU) based on self-reports of drinking. Patients receiving benzodiazepines prior to psychiatric consultation tended to have more complications than patients receiving benzodiazepines after specialist consultation. This may have been due to side effects of benzodiazepines leading to medical and behavioral complications. We recommend earlier consultation of specialists for patients experiencing alcohol withdrawal.

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3.O'Brien JR JM et al. Crit Care Med.
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5.Tracy SW et al. U.S. Department of Veterans Affairs, Veterans Affairs Health Care System, Program Evaluation and Resource Center; 2004.

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7.Hecksel KA et al. Mayo Clin Proc 2008.

**NO. 113**

**COPING STYLES AND FUNCTIONAL DISABILITY IN PATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Mona M. Maaty, M.D.*
*Co-Author(s): Lisa Cohen, Ph.D., Igor Galynker, M.D. Ph.D., Fumitaki Hayashi, M.D. Ph.D., Allison M.R. Lee, M.D., Deimante McClure, B.A.*

**SUMMARY:**
Introduction: Several studies have demonstrated that bipolar patients' ability to cope adaptively can have a significant impact on the course of the illness. Adaptive styles have been associated with fewer relapses and increased time to next manic episode. We sought to determine if coping styles adopted by patients correlated with the level and type of disability experienced by bipolar patients. We compared different coping styles used in bipolar patients, their caregivers, and in healthy controls. Then, patient coping styles were compared to specific domains of disability to determine if there is a correlation.
Methods: Patients diagnosed with Bipolar Disorder by SCID-P were recruited from the Family Center for Bipolar in New York City as part of a larger study of Family-Inclusive Bipolar Treatment. At study intake, coping styles in the patient, caregiver, and control groups were assessed using the Brief COPE measure. Also, patients completed the Sheehan Disability Scale (SDS) which measures work/school impairment, social life impairment, and family life/home responsibility impairment. Those patient coping styles that were significantly different from the other groups were compared with the different domains of the SDS using Pearson correlation.
Results: Twenty-one patients, 22 caregivers and 24 healthy controls were recruited. Patients were diagnosed with Bipolar I (50.0%), Bipolar II (40.9%) and Bipolar NOS (9.1%). The difference between patients and healthy controls in behavioral disengagement was highly statistically significant ($p<0.0005$) with patients engaging more in behavioral disengagement than control. Also, patients used behavioral disengagement significantly more ($p=0.002$) than caregivers. There was a highly statistically significant difference between patients and caregivers and between patients and controls ($p<0.0005$) with patients using self-blame more than the other two groups.
The comparison between coping styles and SDS in the patient population demonstrated a significant inverse correlation between self-distraction coping style and social life impairment ($p=0.009$). There was a significantly positive correlation between behavioral disengagement and work/school impairment, family life/home responsibility impairment and global functioning ($p=0.002$, $p=0.006$, $p=0.001$, respectively). There was a significant correlation between self-blame and global functioning score ($p=0.003$).
Discussion: The present data supports that behavioral disengagement coping and self-blame style are correlated with disability. Behavioral disengagement was the most correlated with global disability followed by self-blame. Interestingly, that self distraction is inversely correlated with social life impairment is a unique finding. These results could help clinicians formulate individualized treatment goals with a component to include transitioning a patient from maladaptive to adaptive coping styles.

**NO. 114**

**TREATMENT CHALLENGES IN CHILDHOOD MAJOR DEPRESSIVE DISORDER COMPLICATED WITH ABNORMAL LIVER PROFILE: A CASE PRESENTATION**

*Lead Author: Gayathri Mahendiran, M.D.*
*Co-Author(s): Smita Bhatt, M.D.*

**SUMMARY:**
Background:Major Depression is a serious condition with an increasing prevalence and incidence of depression among children and adolescents. The more severe form of Depression, MDD, occurs in approximately 1% of school-aged children. The estimated prevalence of major depressive disorder (MDD) is 1% in preschool children, 2% in school-aged children, and 5% to 8% in adolescents. Children with a Depressive Disorder may have concurrent psychiatric disorder such as PTSD, ADHD, ODD or Conduct Disorder. In addition, children may also have comorbid medical illnesses. As with any medical complication addition to a psychiatric disorder, the goals of pharmacological treatment are to treat and do no harm. Case Report:11 year-old AAM with a history of MDD and multiple previous hospitalizations. The latest admission in 2013, he had expressed a wish to die to the school social worker leading to admission. From his previous admission to recent admission, his symptoms ranged from extremely sad mood, irritability, suicidal thoughts, hearing voices and constant fear of losing his mother who has chronic medical illness. Despite his repeated and prolonged inpatient psychiatric stays, he continued to have treatment resistant severe depression. Referencing his previous admission initially he was not tried on any medication due to abnormal liver function tests, and on later admissions was tried on fluoxetine (SSRI), topiramate, sertraline (SSRI). In his last admission due to his elevated liver enzymes, daily blood draws were conducted, along with other recommendations from Pediatrics such as hepatitis panel and Hepatic sonogram were done, also liver biopsy results were obtained, which was done prior to hospitalization. The trial of SSRI was soon discontinued as levels became to up trend and was not long enough to obtain any positive sustained treatment response. At this point treatment team was considering long term care for the patient. It was on the combination of when he was started on risperidone, continued on Lithium and behavioral plan that he showed improvement and discharged to his mother.Discussion: Research shows that psychosocial treatment interventions such as Individual and Family Therapy have good response rates. However, when the depression is severe and manifests with both psychosis and suicidality, AACAP Guidelines recommend the use of FDA approved medications as a component of treatment. At times when a patient is put on an Antidepressant, adverse effects occur, including in some cases, liver enzyme elevation. However, in rare cases, as in this presentation, an initially elevated liver enzyme count could be impede the treatment of the severe depression. In this presentation, the medical investigation in this case has led to a cryptogenic diagnosis. Literature Review does not provide significant evidence either in support of or against the use of Antidepressant medications.

**NO. 115**

**TOXIC EPIDERMAL NECROSIS, SIDE EFFECTS OF SERTRALINE: A**

**CASE REPORT**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): Syed Iqbal MD, Natalia Ortiz MD*

**SUMMARY:**

Objectives:

The objective of this case study is to highlight one rare side effect associated with the use of sertraline. Toxic epidermal necrosis is all thought rare but is a side effect with use of sertraline.

Background:

Steven Johnson syndrome and toxic epidermal necrosis is are sever cutaneous adverse reactions to drugs characterized by extensive detachment of epidermis and erosion of mucus membranes. There is a growing evidence that Steven Johnson syndrome and toxic epidermal necrosis are single disease with common cause and mechanism. The principle difference is the extent of detachment, limited in SJS and more wide spread in TEN. Even though rare (two cases / million population /year) these two have a significant effect on the public health due to high mortality (20-25%) frequent lasting disability and reluctance of survivors and their physician for subsequent use of these medication in future. A multinational case control study conducted in Europe from 1997 to 2001(EuroSCAR study) to study the risk of medication. In this study Sertraline showed a relative risk of RR=11 which was small in comparison with other drugs. In this class of drugs (SSRI) no other drug including fluoxetine was found to be associated with SJS or TEN. Therefore it is interesting to see that SJS or TEN is a rare side effects with sertraline and should be kept in mind while prescribing this medication.

Case Description:

Pt. is 36 y/o AA female who presented with extensive rash for last 4 days. Patient reported history of hypertension and depression. Pt. reported that she was on 50 mg of sertraline which was started from her primary care physician as her depression was not getting better 3 days before the start of the rash the dose of sertraline was increased to 100mg.Pt was admitted in the burn intensive care unit with extensive rash on her skin with bullous eruptions involving the mucus membranes also. All infections screen did not reveal any positive results. Patient was managed symptomatically during her stay in the hospital. Patient denied any similar side effect with sertraline in the past, has not been on any other medication for her depression.

Conclusion:

Although SSRI are considered to be the safest drugs with minimal side effects in comparison with other groups of medication. Cutaneous side effects are very rare with SSRI and has never be a matter of concern when prescribing these medications. This case study shows that even a rare side effect of a medication which is not in consideration can cause significant mortality and morbidity. More research needs to be done in order to study the frequency of these side effects.

**NO. 116**

**"SOMETHING IS BUGGING ME": DELUSIONAL PARASITOSIS IN THE SETTING OF MULTIPLE ANXIETY DISORDERS**

*Lead Author: Jed P. Mangal, B.S.*
*Co-Author(s): Rohul Amin, M.D., Karen Parisien, M.D.*

**SUMMARY:**

Background: Delusional Parasitosis (DP) is a rare psychiatric disorder characterized by the fixed false belief that a patient is infected with parasites. These patients often desire and receive extensive medical evaluations due to persistent complaints of symptoms. We believe the case described here is illustrative of a typical patient with DP. We will also present current evidence for approach to managing this disorder in psychiatric practice.

Case: The patient is a 63 year-old African-American female with a history of Post Traumatic Stress Disorder (PTSD) due to domestic violence and Major Depressive Disorder (MDD) with significant internal barriers to accepting treatments for these conditions who was at her baseline mental state until the time-frame when she presented with concern for "bugs" infecting her body. She complained of feelings that parasites were "moving around and biting" her inside her brain, chest, thighs, buttocks, and perianal area, and felt they had been growing in size and hatching new offspring. These symptoms started around the time when the perpetrator of her domestic violence was coming up on his appeal hearing. She had been seen by dermatology who had diagnosed the patient with Xerosis Cutis. The patient reported frustration that no one took her symptoms seriously and during one encounter, brought a piece of lint as proof in an empty pill bottle. She misperceived "bugs" damaging her body after benign epistaxis from dry nasal mucosa and hematochezia from hemorrhoids. The patient continued to have significant distress with fixed belief despite extensive negative medical work-ups. Confrontation of this patient's delusional nature of presentation was avoided and a multi-disciplinary approach was coordinated with the infectious disease clinic. The patient had an unremarkable parasite work up, and routine evaluations by infectious disease and primary care provider was initiated with continued psychotherapy for her PTSD. She declined treatment for her symptoms with antipsychotics and broaching this topic would elicit significant defensiveness and irritability. The intensity of her delusions waxed and waned over the past two years but she continues to function well and never had any safety concerns or need for hospitalization.

Conclusion: DP is a distressful fixed false belief that requires a broad differential and needs to be distinguished from somatic type of obsessive compulsive disorder, hypochondriasis and somatoform spectrum disorders. DP occurs most commonly in middle aged females and may respond to treatment with atypical antipsychotics but given the nature of this disorder, patients are often resistant to treatment. Although patients with DP will often doubt psychiatric cause of symptoms and may refuse work up, allowing the patient to develop trust in the clinician can lead to appropriate psychiatric work up, formation of a therapeutic alliance, and continued observation for safety.

**NO. 117**

**SUICIDE BY PARAQUAT: A CASE REPORT AND REVIEW OF THE LITERATURE**

*Lead Author: Allison Marshall, M.D.*
*Co-Author(s): Cheryl Person, M.D., Amelia Jane Andrews, M.D., Rohith Malya, MD*

**SUMMARY:**

N,N'-dimethyl-4,4'-bipyridinium dichloride (Paraquat) an herbicide first introduced in the 1960s, has become a com-

mon means of committing suicide in developing nations such as Fiji. We report on a case of a patient who intentionally took Paraquat in a successful suicide attempt. Mr. S was a 47 y/o married Indo-Fijian male without a past psychiatric history who presented with an acute onset on nausea and vomiting after ingesting approximately ¾ of a cup of Paraquat. He had admitted to family that he had financial stressors and he appeared more worried to his son, with whom he lives. He did not have any other psychiatric symptoms per both his son and daughter. The patient was too ill to be engaged in conversation and this did not improve during his hospitalization. Despite seeking almost immediate medical attention (within 1 hour of ingestion) and being administered Fuller's earth twice (incomplete antidote) over the course of 48 hours post ingestion, he developed intractable vomiting, and ultimately cardiac arrest. Ready access to this particular herbicide, with its high lethality, likely contributed to the death. As an agent of overdose it is unique due to the high lethality of very small quantities (10mL) and the lack of either an available antidote or effective treatment. Due to these health and safety concerns it is available by restricted access in the United States and in the European Union it has been banned. In Fiji, Paraquat is readily available at retail shops, even in non-agricultural areas such as the capital city Suva. In an effort to decrease intentional and accidental ingestion three changes to the primary compound have been made: a stenching agent, a bright green dye, and an emetic. These added features have neither decreased the lethality of the compound nor suicides by Paraquat. A few small studies have tracked a marked decrease in suicides with a decrease in imports of Paraquat. While most of the recent literature focuses on attempts to improve survival post ingestion, it neglects the policy positions of developing nations who have had difficulty implementing the WHO recommendations to restrict general access to this lethal compound.

**NO. 118**

**HURDLES IN TREATMENT OF DEPRESSION IN A PATIENT WITH CHRONIC RENAL DISEASE**

*Lead Author: Rogelio Martinez II, M.D.*
*Co-Author(s): Connie L. Barko, M.D., Alyssa A. Soumoff, M.D.*

**SUMMARY:**

Introduction: Depression is a common disorder among the general population and in patients with chronic disease. In patients with chronic kidney disease (CKD), the prevalence of depression is estimated to be from 20-30% in current studies compared to 2-10% in the general population. The importance of this is that several edipemilogic studies have shown that depression in patients with CKD is associated with increased morbidity and mortality.
Case description: This case study involves a 74-year-old woman with a past medical history suggesting chronic kidney disease stage 5 and major depressive disorder admitted to the hospital for treatment of pyelonephritis. Psychiatry was consulted for concerns of worsening symptoms of depression consisting of difficulty sleeping, trouble concentrating, and lack energy, interest and appetite Confounding her presentation was that her worsening renal function, which could also cause some of these symptoms. Prior to this admission, the patient had been on amitriptyline, which in a patient with worsening renal function, causes an increased risk for arrhythmias and hypotension. In addition, patient stated feelings of worsened fatigue when she would take her amitriptyline. The patient reported that prior to admission she had discussed the possibility of starting duloxetine with her primary care physician At that time patient was beginning to start dialysis, which meant that duloxetine, would not be an option because. The patient received her first dose of dialysis, which quickly improved her symptoms of difficulty sleeping, energy and trouble concentrating. At that time patient the requested not to be on any more medications but wanted to continue follow with psychiatry as an outpatient.
Discussion: This case illustrates the importance of recognition the symptoms of depression in patients with CKD and the several obstacles that clinicians regularly encounter when treat these patients. These include limits in which antidepressants can be used because of CKD, renal dosing for those medications that can be used and patient's compliance to take medications.
Conclusion: This case once again brings to light the continued need for further research into which medications have the most appropriate side effect profile for these patients. Furthermore, the question as to what underlying process is that increases the prevalence of depression in these patients still remains unanswered.

**NO. 119**

**HYPOCALCEMIA, BASAL GANGLIA CALCIFICATION, AND CRIME:**
**A CASE OF A FRONTAL-STRIATAL CIRCUIT ABNORMALITY EXACERBATED BY HYPOCALCEMIA**

*Lead Author: Amber C. May, M.D.*
*Co-Author(s): Aneet Y. Ahluwalia, M.D., Tracy L. Binius, M.D., Lauren E. Fiske, M.D. candidate, Michael J. Schrift, D.O., Jehu E. Strange, M.D.*

**SUMMARY:**

Background: Frontal-striatal circuitry provides a framework for understanding behavioral changes in neuropsychiatric disorders. A set of parallel, segregated circuits are known to link specific regions of the frontal cortex to the striatum, globus pallidus, substantia nigra, and thalamus – constituting important computational mechanisms that allow the organism to interact with the environment. Impairments through anatomical lesions or physiological/chemical changes manifest in impaired executive function, apathy and impulsivity. Calcium is known to be involved in the control of neuronal excitability. Hypocalcemia secondary to hypoparathyroidism commonly results in neuropsychiatric features such as emotional instability and bizarre behavior reversible with correction of hypocalcemia.
Case: The patient is a 25 y/o AAM brought to the ED by his wife after becoming increasingly irritable and violent, punching his wife in the face several times, resulting in a black eye. The patient has a PMH of autoimmune hypoparathyrodism, TBI s/p left frontal contusion five years prior, and basal ganglia calcifications on head CT. Both the patient and family report pt's irritability and aggression increased after the TBI, but symptoms worsen with hypocalcemia and improve with calcium correction. In two years, the patient has had numerous admissions for behavior change in the context of hypocalcemia. His symptoms have been successfully treated with haloperidol, but he does not comply as an outpatient. On exam, the patient exhibits agitation, rapid speech, utilization behavior, and tangential thought process. He endorses intermittent AH. MOCA

testing reveals deficits in executive functioning, visuospatial skills, abstraction, and delayed recall with score of 24/30. Head CT shows calcification of the head of the caudate nucleus on the left along with chronic extra-axial left frontal hematoma, all stable in comparison to previous studies. Labs were notable for total Ca 6.2mg/dL, ionized Ca 3.3, Mg 1.7 mg/dL, P 7.6mg/dL, VitD (25-OH) 26 ng/mL, and PTH 8 pg/mL. After Ca replacement, he was started on aripiprazole 5mg and valproic acid ER 1000mg. His mood and behavior improved markedly over several days. He was discharged home on both medications, Ca, Mg, and VitD supplements.
Conclusion: This case illustrates the importance of frontal-striatal circuitry dysfunction in neuropsychiatric disorders. The patient has a caudate nucleus lesion with calcification known to disrupt circuitry leading to deficits in executive function and disinhibition. During episodes of hypocalcemia, the patient becomes acutely and overtly symptomatic. These findings imply an interaction of anatomic, physiological and chemical mechanisms in this brain circuitry and the importance of calcium-phosphate balance in patients with TBI and basal ganglia calcification. Baseline functional imaging following TBI and during behavioral episodes may point to underlying etiology and help guide management.

**NO. 120**

**LEWY BODY DEMENTIA WITHOUT DEMENTIA? DIFFERENTIATING SYNUCLEOPATHIES FROM DELIRIUM**

*Lead Author: Daniel May, D.O., M.S.*
*Co-Author(s): Michael Mrizeck, M.D.*

**SUMMARY:**

Introduction: The DSM-V diagnostic criteria for Neurocognitive Disorders requires that the symptoms do not occur solely in the setting of delirium. However, the diagnostic criteria of Neurocognitive Disorder with Lewy Bodies (NCDLB) includes symptoms that can mimic delirium, namely fluctuating cognition and visual hallucinations. Differentiating between delirium and NCDLB is clinically important, as "up to 50% of individuals with NCDLB have severe sensitivity to neuroleptic drugs" according to DSM-V.
Case: A 67 year old Caucasian male with a history of obstructive sleep apnea, renal transplant in 2010 for diabetic nephropathy and renal stent placement in the last week, presents with a second episode of fluctuating mental status over the last two months.
On presentation, the patient was confused, agitated, had a bilateral postural tremor and slight cogwheel rigidity. The patient's family reported that he had previously been high functioning and lived independently without any clear decline in his cognition. An extensive medical work up for delirium did not reveal a clear explanation for his altered mental status. During his hospital course, he received 4mg of haloperidol IV and soon developed a fever of 104F, muscle rigidity and was transferred to the ICU, where he received dantrolene with rapid improvement in his muscle rigidity and fever. After his sensorium cleared, he also reported that he had been experiencing visual hallucinations of small cats and of people since receiving the haloperidol, but that he was not bothered by these abnormal perceptions.
While aspects of his presentation appeared consistent with NCDLB, delirium could not be excluded. Therefore, after his sensorium cleared he underwent neurocognitive testing to help clarify the diagnosis. His testing revealed deficits in attention and executive functioning, but with relative preservation in visuospatial functioning. He received a trial of donepezil, which appeared to make him more agitated and thus it was discontinued. After the patient was discharged, he obtained an outpatient dopamine transporter SPECT scan (DaT Scan) in an effort to determine whether his presentation could be related to multiple system atrophy versus NCDLB, and the scan suggested NCDLB. After following up with on an outpatient basis a month after discharge, his mental status appeared to be back to his baseline.
Conclusion: This case reviews our work up for delirium and the efforts we undertook to differentiate it from NCDLB. This case also provides an opportunity to review the role of functional imaging for the diagnosis of NCDLB. While a definitive diagnosis cannot always be made early in the course of dementia, patients and their families desire guidance and reassurance despite the limitations in our diagnostic abilities.

**NO. 121**

**OPIOID ADDICTION OR SELF MEDICATION**

*Lead Author: Askar Mehdi, M.D.*
*Co-Author(s): Arshad Ali, MD., Nor Darwish, MS3., Rasha Atallah, MS3., Neil Nimkar, MS3, Asghar Hossain, MD*

**SUMMARY:**

It is well known that endocrine dysfunction may produce symptoms similar to the clinical manifestations of psychiatric disorders. The symptoms of hyperthyroidism often mimic those of anxiety disorders, e.g. tachycardia, diaphoresis, palpitations, and restlessness. Hyperthyroid patients have also been shown to exhibit depressive symptoms of psychomotor retardation, energy loss, and fatigue. The above symptoms often cause patients severe distress, and may predispose vulnerable populations to substance abuse.
Due to the highly addictive potential of opioids and severe impairment in functioning resulting from opioid abuse, we postulate that it is of vital importance to address psychiatric manifestations of endocrine dysfunction. Are hyperthyroid patients prone to self-medicate their psychiatric symptoms with opioids?
We present a 31-year-old male with hyperthyroidism, who presented to our ED with worsening depression, suicidal ideation, and recurrent relapse on opioids. The patient had a history of opioid dependence and opioid induced mood disorder with depressive features, and had undergone multiple opioid detoxifications as well as multiple inpatient psychiatric hospitalizations. He never received trial of psychotropic medication, but was being discharged to follow up with NA meetings. He was prescribed Methimazole by primary care, showed partial compliance due to limited response on his psychiatric symptoms and over all functioning.
The case suggests that uncontrolled hyperthyroidism may contribute to the etiology of abuse of CNS depressants including opioids. The central nervous system depressant effects of opioids may be therapeutic, if temporarily, to the hyperarousal of anxiety, while the euphoric properties may have a similar effect for depression. Thus, there is great preventive potential in early diagnosis and treatment of hyperthyroidism and its psychiatric manifestations. As it may lessen both the personal and societal

burdens of opioid abuse and dependence. Further studies are needed to investigate the extent of co-occurrence of these disorders and to determine the presence of causality.

**NO. 122**

**IMPACT OF CHILDHOOD ABUSE ON PHYSICAL AND MENTAL HEALTH AND HEALTH CARE UTILIZATION AMONG FEMALE VETERANS**

*Lead Author: Rowena C. Mercado, M.D., M.P.H.*
*Co-Author(s): Katherine M. Iverson, PhD., Shannon Wiltsey-Stirman, PhD*

**SUMMARY:**

Background
About 27-49% of female Veterans have been exposed to physical or sexual abuse during childhood. Relatively few studies have examined the impact of childhood abuse on health outcomes and health care use among female Veterans. The objective of this study is to determine whether exposure to childhood trauma, namely childhood physical abuse or childhood sexual abuse, predicts health symptoms and health care use frequency among female Veterans.
Methods
369 female patients of the New England VA Healthcare System completed a paper-and-pencil mail survey that included assessments of demographic characteristics, self-reported trauma history, including childhood physical and sexual abuse, and self-reported health care use. Physical and mental functioning was measured using the SF-36 Physical Component Scale (PCS) and Mental Component Scale (MCS).
Results
Of the 369 Female Veterans in this study, 109 (29%) reported experiencing childhood abuse, with 22 (6%) experiencing physical abuse only, 41 (11%) experiencing sexual abuse only, and 46 (12%) having had both physical and sexual abuse during childhood. Those who experienced childhood abuse were significantly more likely to be nonwhites (41 versus 27 percent, p = 0.03), and tended to be younger (mean age [SD] 52 [12] vs. 57 [19]). Female Veterans with a history of childhood abuse had significantly worse physical health (PCS scores, 37.3 versus 40.9, p = 0.02) and mental health (MCS scores, 42.4 versus 46.3, p = 0.01). Those with childhood abuse experience had higher mean number of visits to a VA facility for medical care (13 visits vs. 10 visits, p = 0.06) and mental health care (11 visits vs. 6 visits, p = 0.008). Mean number of visits to non-VA facilities for medical and mental health care did not significantly differ between those with a history of childhood abuse and those without.
Conclusions
Adverse childhood experiences were associated with poor physical and mental health functioning and greater healthcare utilization among female Veterans. Findings of this study contribute to the limited information about the factors influencing health and healthcare utilization in this special population, and will hopefully inform the development of policies and procedures to ensure access to quality health care for trauma-exposed female Veterans.

**NO. 123**

**PREDNISONE-INDUCED CATATONIA**

*Lead Author: Hun Millard, M.D.*
*Co-Author(s): Danielle Dahle, M.D., Christine T. Finn, M.D.*

**SUMMARY:**

Background:
Catatonia was first characterized as a syndrome of movement and emotion by psychiatrist Karl Kahlbaum in 1874. Shortly thereafter, Emil Kraepelin included catatonia as a symptom of dementia praecox. Previously, catatonia has been most closely associated with schizophrenia. Today, catatonia is recognized to also be associated with medical conditions and revisions included in the DSM-4 and DSM-5 reflects the recognition of a catatonic syndrome separate from mental illness. More than 35 medical disorders are now identified to be associated with catatonia, including exposure to steroids and other medications.
Objective:
The authors provide a case report on the development of catatonia after Prednisone treatment, independent of an acute mood or psychotic episode.
Method:
The authors review the existing literature regarding catatonia associated with steroids and describe a case of catatonia developing after a brief Prednisone course with resolution of symptoms after Lorazepam treatment.
Results:
Catatonia developed after a 3 day Prednisone treatment period in a patient without overt psychotic or mood symptoms and resolved with IV Lorazepam management. Catatonia returned after Prednisone was inadvertently re-administered.
Discussion:
This case adds to the evidence that steroids can induce a catatonic state independent of a psychiatric syndrome, even at low dosages.

**NO. 124**

**CLOZAPINE AND CONCOMITANT CHEMOTHERAPY IN A PATIENT WITH SCHIZOPHRENIA AND NEW ONSET ESOPHAGEAL CANCER**

*Lead Author: Varun Monga, M.D.*
*Co-Author(s): Marin Broucek M.D., Sriram Ramaswamy M.D.*

**SUMMARY:**

Introduction: Clozapine is an effective agent for treatment-resistant schizophrenia. Clozapine therapy is associated with risk of neutropenia and agranulocytosis. The use of clozapine in patients diagnosed with cancer and receiving chemo radiation therapy poses a therapeutic dilemma. Potential loss of therapeutic benefits from clozapine and risk of a psychotic relapse must be carefully weighed against the accentuated risk of drug-induced neutropenia. There is limited clinical evidence available to guide clinicians faced with such situations. We report the case of a patient maintained on clozapine treatment despite chemotherapy (Paclitaxel and Carboplatin) for squamous cell carcinoma of the distal esophagus.
Case Report: The authors present a case of an elderly male with schizophrenia and on stable clozapine therapy that developed new onset squamous cell carcinoma of the distal esophagus. Patient was doing fairly well on clozapine maintenance therapy (500 mg a day) until he developed symptoms of progressive dysphagia to solid foods and accompanying weight loss. Hematology oncology workup revealed T3-4N1M0 squamous

cell carcinoma of the lower esophagus with no liver metastasis. He was suggested to undergo chemo-radiation therapy for his condition. Patient had a J-tube placed and was started on weekly carboplatin and paclitaxel. He was also switched to the rapidly disintegrating tablet formulation of clozapine (Fazaclo). Based on a careful risk-benefit assessment and a shared medical decision-making process involving the patient and his legal guardian, a decision to continue clozapine therapy was made. Patient's blood counts were closely monitored during this period. A special monitoring protocol was developed for the patient. This included weekly monitoring of CBC and differential counts along with modified hematological parameters for continuation of clozapine therapy. Close collaboration with his mental health and oncology team was maintained. Patient was able to receive full dose of chemotherapy along with his regular dose of clozapine. There was no reemergence of psychosis, development of neutropenia or agranulocytosis.
Conclusions: Clozapine and chemotherapy can be successful combined despite the risks involved. However, this should only be undertaken if the risk-to-benefit ratio for the patient favors continuation of clozapine and in a setting where close monitoring and collaboration between providers is possible. We review the literature on concurrent chemotherapy in patients on clozapine therapy, risk of drug induced neutropenia and discuss management strategies.

**NO. 125**

**ADDRESSING SYSTEMATIC BARRIERS IN ACCESS TO CARE FOR BHUTANESE REFUGEES IN HOUSTON: EXPERIENCE FROM THE REFUGEE HEALTH AND LEADERSHIP ACADEMY**

*Lead Author: Nidal Moukaddam, M.D., Ph.D.*

**SUMMARY:**

Background: Refugee resettlement following war or civil conflict is fraught with many complications, some systematic (e.g. lack of training) and some cultural (e.g. not acceptable to ask for help). For Bhutanese refugees, the CDC reports high suicide rate, anxiety, depression, low perceived social support; additionally, because of poor knowledge of preventive and mental health, limited access to healthcare, language barriers and low literacy, this population is unlikely to seek care. More than 40% of this population is estimated to have a have mental health issue.
Objectives: address systematic & personal barriers to get care in Bhutanese refugee population sample. This was done via a multipronged approach, including personal (P) versus systematic (S) pilot interventions
Methods: Medical student volunteers at the RHLA, in conjunction with the Alliance for Multicultural services and Baylor College of Medicine, conducted a needs assessment and provided:

- Educational workshop (x2) (P)
- Facilitated access to financial resources, "gold card" (P/S)
- Training and education for case managers (S)
- Health fair and other community events participation (S)

Outcomes: Group participants had an average age of 47 years. All group participants needed help with translation to English, and found lack of functional English knowledge to limit their health access. Only 50% of surveyed individuals in groups had health coverage. There was resistance to discuss mental health issues.
Conclusions: Limited resources are available for refugees (case managers, specialized refugee clinic, county resources/insurance) but are underused because of cultural and language barriers. Specifically, mental health issues are under-recognized and under-reported. The sample population was receptive to the pilot intervention, found it helpful, and improved referral from resettlement agencies to mental health clinic was noted in months following pilot program. Development of cultural and language specific material is felt to be a priority.

**NO. 126**

**SUBSTANCE MISUSE IN THE ELDERLY: A RETROSPECTIVE CHART REVIEW OF PATIENTS IN THE SENIOR RECOVERY TRACK OUTPATIENT PROGRAM**

*Lead Author: Padmapriya Musunuri, M.D.*
*Co-Author(s): Gibson T. George, MD, Robert Kohn, MD, Carolina Retamero, MD, Marc Zisselman, MD*

**SUMMARY:**

Background
Substance misuse has been identified as a growing problem among older adults. It is estimated that the use of any illicit drug in Americans above 50 years of age will increase from 1.6 million in 2000 to 3.5 million in 2020. This increase is considered to be the combined effect of increased rate of use and the growing elderly population due to aging of the baby boomer cohort. There are only a limited number of studies that include illicit drug misuse. Between 1960 and 2011, one review only located 26 publications.
Objective
This study examines differences in the substance use patterns, demographic, health, and psychosocial factors between older adults and the elderly and also the elderly who use illicit drugs with or without alcohol in comparison with those that use only alcohol.
Method
A retrospective chart review was conducted of all outpatients aged 50 and older who presented to the Senior Recovery Track at Belmont Center for Comprehensive Treatment in Philadelphia, PA between 2006 and 2013. The 106 charts were abstracted for demographic data, residential status, employment status, psychiatric diagnosis, illicit drug use, past psychiatric history, past substance abuse treatment, family history, legal history, co-morbid medical conditions, medications and length of treatment. Psychiatric diagnoses were based on the diagnoses recorded by treatment provider. Age was divided into two groups, age 50 to 64 and age 65 and over. Statistical analysis consisted of the chi-square test for categorical data, independent t-test for continuous data, and logistic regression analysis to adjust for gender and education.
Results
The sample consisted of 84 discharged and 22 active patients. Alcohol use disorder was higher in the 65+ group, while illicit drug use disorder was greater among the younger group. A significantly higher number of patients were females in the 50 - 64 age group, 63% versus 33.3%. Most of the patients were African Americans, 61.0%. A higher percentage of the younger group was never married. The older group was less educated. The younger group had significantly more inpatient psychiatric hospitalizations, prior outpatient treatment, and prior sub-

stance use rehabilitation. A history of self-harm was markedly increased in the younger group compared to the older group, 55.1% versus 22.8%. In addition, the younger cohort had experience markedly higher rates of abuse during their lifetime.
Conclusion/Discussion
The aging baby-boom cohort will place increasing demands on the substance dependence treatment system in the next several years, requiring a shift in focus in order to address the special needs of an older population of substance users. The focus of substance abuse treatment and research in the aging population will need to switch to comorbid treatment of alcohol and illicit drug disorders, and not be focused primarily on alcohol disorders.

**NO. 127**

**COMORBIDITY OF DEPRESSIVE AND ANXIETY DISORDERS IN ADOLESCENTS WITH COMPLICATED DIABETES MELLITUS TYPE 1: A 20-YEAR DATABASE REVIEW**

*Lead Author: Nivedita Nadkarni, M.B.B.S.*
*Co-Author(s): Leigh Gayle, BS,Vishal Madaan, MD*

**SUMMARY:**

Objectives: 1) To appreciate the prevalence of comorbid depression and anxiety among adolescents with acute serious hyperglycemic states associated with diabetes mellitus type 1. 2) To highlight issues in managing depression and anxiety in adolescents with diabetes mellitus type 1.
Introduction: Type 1 Diabetes Mellitus (DM) is a chronic endocrine disorder caused by impaired insulin secretion due to the destruction of β-cells in the pancreas. Psychiatric disorders, such as depression and anxiety, have been shown to be more prevalent in the diabetic population, which puts them at an even greater risk for negative health outcomes. Determining the prevalence and potential risk factors for depression and anxiety in adolescents with type I DM is critical to the prevention of serious hyperglycemic complications, such as diabetic ketoacidosis and hyperosmolar hyperglycemic state.
Methods: A literature review of existing research on the prevalence of comorbid depression and type 1 DM was conducted using the PubMed database. Following this, de-identified patient data was reviewed using the University of Virginia's (UVA) Clinical Data Repository (CDR). The CDR is a database of clinical and financial information collected from approximately 1.2 million patients who have received care at UVA over the past twenty years. Variables used include: patients who received inpatient or outpatient care from 1992-2012, aged 13-18 years, diagnosis of diabetic ketoacidosis or hyperosmolar hyperglycemia associated with type 1 DM and a diagnosis of a depressive disorder. The demographic data was collected and analyzed.
Results: Quantitative analysis showed a 2.3 fold increase in incidence of depression in adolescents with type-1 DM than in the non-diabetic adolescent population. Among the general population enlisted in the database (N=132302), 4.4% of adolescents had a depressive disorder (N=5854). On the other hand, adolescents with acute, serious hyperglycemic complications of type-1 DM (N=228), 10.1% were diagnosed with a depressive disorder (N=23). Similarly, CDR indicated a 53% increase in incidence of anxiety disorders in adolescents with type-1 DM compared to the non-diabetic adolescent population. Approximately 4.0% (N=5306) of adolescents had an anxiety disorder compared to the general population included in the database (N=132302). Among the adolescents with acute, serious hyperglycemic complications of type-1 DM (N=228), 6.1% were diagnosed with an anxiety disorder (N=14).
Conclusions: Management of DM during adolescence is particularly challenging, and mental health issues can interfere with the attainment of such skills. Anxiety and mood disorders are common in adolescents with type 1 DM and may negatively affect disease management and glycemic control. Adolescents with acute serious complications of type 1 DM are a vulnerable group, and routine screening for common psychiatric disorders is recommended.

**NO. 128**

**THE ROAD LESS TAKEN: TREATING BIPOLAR DEPRESSION DURING PREGNANCY.**

*Lead Author: Caesa Nagpal, M.D.*
*Co-Author(s): Melissa Allen, D.O, Teresa Pigott, M.D.*

**SUMMARY:**

Background: Bipolar Disorder typically begins during adolescence or early adulthood. The childbearing period is generally considered a time of high risk for the onset or exacerbation of mood and psychotic episodes in women with Bipolar Disorder, yet there is a paucity of information concerning the pharmacological treatment of Bipolar Disorder during pregnancy. We report a case of a pregnant female with Bipolar I Disorder admitted for severe depression and recent suicide attempt that was treated with Quetiapine.
Method (Case Report): Ms. A, a 26 year old 20 week pregnant female with previous diagnosis of Bipolar I Disorder and a history of Polysubstance Dependence was admitted to an acute psychiatric unit for severe depression and a recent suicide attempt by jumping out of a moving vehicle 3 days prior to her admission. She had been off all psychotropic medication x 5 mo. and endorsed severe depression with neurovegetative symptoms and paranoid thoughts over the past month and recurrent SI over the past 2 weeks. She relapsed on cocaine, cannabis, Oxycodone, and Alprazolam 4 days prior to admission, but had been sober for 5 mo. prior to that time. She was started on Quetiapine at 25 mg/day which was slowly increased to 200 mg/day for her depressive symptoms and as a mood stabilizer. After 4 days of hospitalization, her depression was much improved, her affect was stable, she denied SI/HI, her paranoia had resolved, her sleep and appetite had normalized, and there was no evidence of acute medical issues. She was subsequently discharged to home. She agreed to continue taking her medications and to abstain from illicit substance use.
Discussion: While traditional mood stabilizers (MS) such as Lithium, Valproate, Carbamazepine are generally avoided during pregnancy due to their risk of teratogenicity, both first generation (FGA) and second generation antipsychotics (SGA), have proven effective in the treatment of manic and mixed episodes of mania during pregnancy. Since the FGAs lack efficacy in Bipolar Depression, recognized options for Bipolar Depression pharmacotherapy during pregnancy include the MS, Lamotrigine, and two of the SGAs, Quetiapine and Lurasidone. However, Lamotrigine requires a slow titration schedule to reduce risk of life threatening rash and there is extremely limited data concerning Lurasidone use in pregnancy. Quetiapine is Pregnancy Category C, but is associated with the lowest amount of placental passage compared to other FGAs and SGAs

and no relevant changes in drug maternal serum levels and pharmacokinetic properties occur during pregnancy.
Conclusion: With these issues in mind, Quetiapine may represent a particularly promising monotherapy choice in the treatment of Bipolar Depression during pregnancy.

**NO. 129**
**QUETIAPINE AND LITHIUM COMBINATION INDUCED NEUROLEPTIC MALIGNANT SYNDROME: A CASE REPORT**
*Lead Author: Kishan Nallapula, M.B.B.S.*
*Co-Author(s): Shyamala D. Bheemisetty, M.B.B.S., Muaid H. Ithman, M.D.*

**SUMMARY:**
Introduction: Neuroleptic malignant syndrome (NMS) is a well-known side effect of most antipsychotics. The diagnostic criteria include exposure to dopamine antagonist or dopamine agonist withdrawal, within the past 72 hours. According to Levenson's criteria for diagnosing NMS, major manifestations include: fever, rigidity, and elevated creatine kinase. Minor manifestations include: tachycardia, abnormal blood pressure, tachypnea, altered consciousness, diaphoresis and leukocytosis. The presence of all three major, or two major and four minor, manifestations indicates a high probability of the presence of NMS. Medications regularly implicated in NMS are typical neuroleptics, non-psychotropic dopamine blocking medications and atypical neuroleptics. Occasionally, it has also been shown to be a side effect of lithium and fluoxetine. Lithium and haloperidol are well studied in literature to cause NMS when used in combination. Below is a case of neuroleptic malignant syndrome as a side effect of quetiapine and lithium when used in combination.
Case: Our patient is a 44-year-old white female with a past medical history of bipolar disorder. Patient was recently discharged from a psychiatric inpatient hospitalization for a depressive episode. Patient was discharged on Quetiapine 800 mg at bedtime, lithium 900 mg at bedtime, and lamotrigine 25 mg twice a day. Patient was brought to the emergency room five days after she was discharged, as she was found unresponsive. In the emergency room she had altered mental status. Her examination showed increased muscle rigidity, a temperature of 38°C. Laboratory investigation showed creatinine kinase >20000 along with elevated liver enzymes and acute kidney injury. Lithium level was 0.6. Patient was admitted to the intensive care unit; she was intubated, and placed on propofol for four days. Patient was managed medically with IV fluids and her mental status improved within four days. During the hospitalization, psychiatry was consulted, and lithium was restarted at 300 mg daily, which the patient received for 19 days and then it was increased to 300 mg twice a day. Lamotrigine was resumed at 25 mg daily, and increased to 25 mg twice a day after 16 days. Quetiapine was discontinued since admission.
Discussion: A literature review was performed using MEDLINE. Keywords included quetiapine, lithium, and neuroleptic malignant syndrome. Case reports have been reported in the literature for quetiapine monotherapy as well as combination of quetiapine with other antipsychotics. There have been case reports of NMS with lithium monotherapy and combination with antipsychotics. Our literature review did not reveal any case of NMS with a combination of quetiapine and lithium. From our case it suggests that lithium in combination with quetiapine, could reduce the threshold for development of neuroleptic malignant syndrome. Clinicians must be aware of precipitating NMS particularly when using lithium with antipsychotics.

**NO. 130**
**REVIEW OF NEUROPSYCHIATRIC SYMPTOMS MANIFESTATION OF VASCULAR DEMENTIA: A CASE REPORT**
*Lead Author: Bharat Nandu, M.D., M.P.H.*
*Co-Author(s): Chizoba Usuwa, M.S.III, Malika Rawal, M.S.IV, Matthew Erisman, M.S.III, Asghar Hossain, M.D.*

**SUMMARY:**
Most dementias are characterized by an acquired global decline in cognitive and functional capacity as well as the development of neuropsychiatric symptoms. These symptoms may be the presenting manifestations of dementing disorders, appearing before cognitive alteration, and varying according to dementia severity. In general, the most frequently reported symptoms are apathy, depression, agitation and irritability. Psychiatric disturbances are also associated with more rapid cognitive decline, earlier nursing home placement, and increased cost of care. Research into the neuropsychiatric symptoms in vascular dementia has received less attention, although VaD is the most frequently occurring cause of dementia after Alzheimer's Dementia. our case report is to discuss these neuropsychiatric symptoms of vascular dementia and highlight the importance of meticulous assessment of these symptoms as a routine part of a good clinical practice.

**NO. 131**
**NEUROPSYCHIATRIC MANIFESTATIONS OF LIVER DISEASE AND ASSOCIATED TREATMENT**
*Lead Author: Greta Naylor, M.D.*
*Co-Author(s): Gerald Park, M.D.*

**SUMMARY:**
Background: Hepatitis C infection is a major public health concern in the United States. It is estimated that 4 million people are infected with Hepatitis C, and that it causes approximately 8,000 to 10,000 deaths each year. Neuropsychiatric disorders are common among hepatitis C patients; furthermore, medications used to treat these patients such as interferon, expose them to the risk of psychiatric symptoms. Psychiatric manifestations may adversely affect the prognosis and treatment of patients with Hepatitis C infection.
Method: We describe a case of new-onset mood symptoms in the context of Hepatitis C infection and its treatment course with interferon and ribavirin. We performed a Medline literature search in order to better understand the neuropsychiatric sequelae of chronic hepatitis C infection and its treatment.
Results: A 35-year old male with a history of cirrhosis secondary to Hepatitis C infection was evaluated for acute behavioral changes four months after initiation of interferon and ribavirin. He presented with new-onset symptoms of worsening mood with alternating periods of irritability and elevated mood and heightened anxiety. He also experienced decreasing concentration, hypervigilance, and distractibility. His presentation was deemed to be secondary to his medical illness and ensuing treatment. Given his liver function, a decision was made to use paliperidone and lorazepam. With this regimen, we were able to recommend continuation of antiviral treatment.

Conclusion: Hepatitis C infection and common treatment strategies utilizing antiviral agents are known to have serious neuropsychiatric sequelae. These patients will benefit from ongoing monitoring and appropriate treatment of symptom clusters consistent with psychiatric disorders. Proper and timely treatment may advance the overall prognosis while treating the comorbid symptoms.
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**NO. 132**

**DEEP BRAIN STIMULATION FOR THE TREATMENT OF OBSESSIVE-COMPULSIVE DISORDER**

*Lead Author: Michele Nelson, M.D.*
*Co-Author(s): Gerald A. Maguire, M.D., Frank P. K. Hsu, MD, PhD, Jeannie D. Lochhead, M.D., Michele A. Nelson, M.D.*

**SUMMARY:**

Objective: Investigate the efficacy of using deep brain stimulation therapy to treat refractory Obsessive-Compulsive Disorder.
Background: Obsessive-Compulsive Disorder (OCD) is often a debilitating disorder affecting 2-3% of the American population. Current evidence based approaches for treating OCD includes cognitive behavioral therapy and pharmacotherapy. However, approximately 10% of OCD sufferers will continue to have symptoms that do not respond to such treatment. For years, capsulotomies have been considered an alternative treatment for these patients but recently deep brain stimulation, similar to those used for Parkinson's Disease have been investigated.
Methods: Patient was screened in the psychiatry department at UC Irvine Medical Center for refractory OCD. Inclusion criteria included treatment refractory OCD, moderate to severe OCD severity based on Yale Brown Obsessive Compulsive Score (YBCOS), functional impairment due to OCD, disease duration at least 5 years, and adult age. This was followed by preoperative screening by Dr. Frank Hsu of Department of Neurosurgery, and the patient's primary care physician. The patient will have the device placed in the following stages: lead implantation, neurostimulator implantation, MRI brain imaging to determine area in brain to place lead, passage of lead into brain. Anticipate placement of deep brain stimulation device just superior to nucleus accumbens, and will assess his mood, anxiety and energy prior to implant and during macro stimulation There are two stages for the surgery.
Case: This patient is a 36 year old male with severe obsessive-compulsive disorder diagnosed at 14 years old, which has been refractory to medication therapy. Other medical history significant for stuttering, measles, chicken pox as a child, prior seizure secondary to medication, and impaired hearing secondary to numerous ear infections as a child. Patient has also had a trial of medical cannabis for OCD, but without significant relief of symptoms. The current medications include lorazepam 1 mg as needed for anxiety, buspirone 20 mg BID, clomipramine 25 mg daily, duloxetine 60 mg nightly, iloperidone 12 mg bid, fluoxetine 80 mg qhs. Family history significant for brother with OCD. After insufficient symptomatic response from medications, patient is scheduled for implantation of deep brain stimulator. The deep brain stimulator will consist of bilateral deep brain stimulator leads implanted with a batter implanted in the R chest, done in 2-stage procedure. Part one scheduled for 12/12/13.
Results: The patient will be followed by clinicians to assess for clinical improvement. The patient's (YBCOS) may be collected and compared to monitor the clinical course. Results to follow
Conclusion: to follow

**NO. 133**

**DEPRESSIVE AND ANXIETY SYMPTOMS IN ACADEMIC MEDICAL FACULTY**

*Lead Author: Patricia C.M. Nolan, M.D.*
*Co-Author(s): George Hadjipavlou, M.D., Raymond W. Lam, M.D.*

**SUMMARY:**

Introduction: A growing body of research has investigated the mental health of physicians. However, little is known about non-physician academic faculty who may be at equally high risk of experiencing symptoms of mental illness and resultant work impairment. We surveyed depressive and anxiety symptoms and mental-health related work dysfunction in a sample of physician and non-physician faculty within a large Canadian Faculty of Medicine (FoM).
Methods: The Stress and Depression Checkup was a component of a workplace mental health initiative sponsored by the FoM at the University of British Columbia. All full-time FoM employees (~ 700 academic faculty and 1500 administrative/support staff) were invited by email to complete an anonymous web-based mental health screening survey which included the PHQ-9 and the GAD-7, two widely used screening instruments for depression and anxiety, respectively, and the Lam Employment Absence and Productivity Scale (LEAPS), a validated measure of work impairment. Several waves of survey recruitment were conducted over a one-year period.
Results: A total of 1127 unique responses were recorded, including 290 from self-identified academic faculty, representing a response rate of 41%. Eighteen percent (42/237) of academic faculty met PHQ-9 criteria for clinically significant depression while 16% (37/232) met GAD-7 criteria for clinically significant anxiety; 20% (35/172) had significant work impairment according to the LEAPS. Compared to physician faculty (n=117), non-physician faculty (n=147) had higher rates of anxiety and depression. Non-physician faculty were also significantly more likely to report work impairment, and had higher mean scores on the PHQ-9, GAD-7, and LEAPS.
Conclusions: Academic medical faculty responding to an anonymous online survey reported high rates of clinically significant depressive and anxiety symptoms and work impairment. Our results suggest that non-physician academic faculty may be at higher risk for developing mental health symptoms than their academic physician colleagues.

**NO. 134**

**COMPARISON OF EFFICACY AND TOLERABILITY OF ATYPICAL**

**ANTIPSYCHOTICS IN SCHIZOPHRENIA: MIXED-TREATMENT COMPARISON ANALYSIS BASED ON HEAD-TO-HEAD TRIAL**

*Lead Author: Gyu Han Oh, M.D.*
*Co-Author(s): Seong Hoon Jeong, M.D., Ph.D., Je-Chun Yu, M.D., Chang Hwa Lee, M.D., Ph.D., Kyeong-Sook Choi, M.D., Ph.D., Eun-Jeong Joo, M.D., Ph.D.*

**SUMMARY:**
Second-generation antipsychotics have been repeatedly shown to be superior to placebo. However, the comparative efficacy among these drugs has not been systematically evaluated. The closest attempts may be systemic reviews compiling the hitherto published clinical trial data. However, using traditional pairwise meta-analysis, only one-to-one comparison results not the whole hierarchical relationship could be provided. Rather than summing up pairwise comparison results, mixed-treatment-comparison (MTC) procedure tries to simultaneously compare multiple drugs. It can produce overall picture of the hierarchies among the compared drugs. In this study, we used MTC procedures to elucidate the comparative efficacy and tolerability of second-generation antipsychotics.
Seven antipsychotics were selected based on the availability of the relevant data. Data were gathered from a series of review article published by the Cochrane Collaboration. Seventy-three independent clinical trials were included and the number of subjects was over 15,000. Five outcome measures were analyzed: 1) percentage of no clinically important response as defined by the original authors, 2) PANSS total score change from baseline to endpoint, 3) percentage of akathisia, 4) percentage of antiparkinson medication use, 4) percentage of BMI increase more than 7% and 5) percentage of drop-out due to any reasons. For the analysis, open-source software GeMTC and JAGS were used.
All the second-generation antipsychotics included in this study showed fairly similar efficacy but widely different tolerability. In terms of efficacy, amisulpride, clozapine and olanzapine were ranked higher than aripiprazole, quetiapine and ziprasidone. Clozapine and olanzapine were superior in terms of akathisia and extrapyramidal symptom risk, but, far more prone to induce clinically important weight gain. Overall, these two drugs had lowest risk of drop out due to any reasons.
Using MTC methodology, we could line up the second generation antipsychotics according to their hierarchical superiority in terms of efficacy and tolerability. Though the wide overlap among the confidence intervals and the inconsistency between the direct and indirect comparison results may limit the validity of these results, it may still allow the important insights into the relative merits of the available drugs.

**NO. 135**

**VARIABLES INFLUENCING SUBJECTIVE WELL-BEING IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Jinseung Oh*
*Co-Author(s): Young-Hoon Ko, M.D., Ph.D., Jong-Woo Paik, M.D., Ph.D., Moon-Soo Lee, M.D., Ph.D., Changsu Han, M.D., Ph.D., Hyun-Ghang Jeong, M.D., Ph.D., Seung-Hyun Kim, M.D., Ph.D.*

**SUMMARY:**
Objectives
Subjective well-being in patients with schizophrenia is increasingly being recognized as important clinical outcome measures. The purpose of this study was to analyze the relationship between subjective well-being and other clinical parameters, such as sociodemographic and clinical variables, which include positive and negative symptoms, depressive symptoms, insight, drug adverse effects.
Methods
Fifty-one outpatients who were diagnosed with schizophrenia were monitored. All patients took only one kind of oral antipsychotic. Subjective well-being was assessed by using a Self-rating Scale to measure Subjective Wellbeing on Neuroleptics-Short form (SWN-K). In addition, sociodemographic variables, Positive and Negative Syndromes of Scale (PANSS), Calgary Depression Scale for Schizophrenia (CDSS), Liverpool University Neuroleptic Side Effect Rating Scale (LUNSERS), Korean Version of the Revised Insight Scale of Psychosis (KISP), Multidimensional Scale of Perceived Social Support (MSPSS) were also evaluated. The relationships between subjective well-being and these clinical variables were assessed.
Results
Education years and social support scores were positively correlated with the total scores of SWN-K. However, severity of illness, severity of depression, severity of side effect and scores on the insight were negatively correlated with the total scores of SWN-K. Stepwise multiple regression analyses indicated that the total scores of SWN-K in patients with schizophrenia was associated with negative symptoms and insight.
Conclusions
Better insight and severer negative symptoms in patients with schizophrenia may be associated with worse subjective well-being. The more careful evaluation of subjective well-being in patients with schizophrenia should be required for their proper management.

**NO. 136**

**A PERSONALIZED PATIENT PAGE**

*Lead Author: Niels Okkels, B.Sc.*
*Co-Author(s): Mr. Niklas W. Andersson, B.Sc.*

**SUMMARY:**
A patient page is a document describing a disease in easy-to-understand, layperson's terms. It is considered important in motivating patients and their relatives to engage in treatment. Patient pages are distributed widely in many areas of health care and typically present general information about a disease and its treatment.
We believe that the value of a patient page would be improved, if the information was placed in the context of the patient's personal clinical data. We call this a personalized patient page. The idea of a personalized patient page is fairly new, and until now it has not been applied to the treatment of persons with mental illness. With this in mind, we developed an example of a personalized patient page for a fictional patient with depression (sample page available online).
When the page is implemented in the clinic, we envisage that it would be generated automatically when results from an examination are recorded in the patient's file. Furthermore, the page could be delivered to the patient's e-mail inbox or smartphone application, and the page could have an interactive design. For example, if the patient wishes to clarify or know more about "minor depression," he or she would click on that term and the

relevant information would be displayed.
In conclusion, we predict that implementing a personalized patient page in the treatment of persons with mental illness will promote patient engagement in treatment, motivate patients to take responsibility, and lead to greater satisfaction with patient-doctor communication.
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**NO. 137**

**THE THIN LINE BETWEEN PSYCHOSIS AND GENDER DYSPHORIA IN NEAR EMERGENT SETTINGS**

*Lead Author: Christopher F. Ong, M.D.*
*Co-Author(s): Almari Ginory, D.O., Herbert Ward, M.D.*

**SUMMARY:**
Introduction
Evaluating decisional capacity has become an increasingly contentious topic. Of all the psychiatric conditions, psychotic disorders have received the most attention in terms of capacity research. While it could easily be assumed that those with conditions like schizophrenia would be easy to assess with commonly used capacity tools such as the Aid to Capacity Evaluation, those with non-bizarre delusions who lack the common positive or negative symptoms seen in schizophrenia provide a unique challenge. Moreover, those who fulfill the criteria for both delusional disorder as well as gender dysphoria can further complicate any capacity evaluation. We present the case of a patient who fulfilled the criteria for both delusional disorder as well as gender dysphoria requiring an emergent capacity evaluation.
Case Report
A 30-year-old Caucasian prisoner was taken to the ED after he almost self-amputated his penis. While attempting to consent the patient for penile re-implantation, the patient states that he does not want his penis re-attached. Psychiatry was consulted regarding the patient's capacity to make this decision. The patient stated that he was "not comfortable being a man" and that, if re-attached, he would sever his penis again. While evaluating for capacity, the patient says he understands the proposed treatment to re-attach the penis and recognizes the alternative of not re-attaching the penis. The patient adds that if he refuses the proposed penile re-attachment, he would have to pee like a dog, casually referring to the difficulty of controlling his urinary stream sans penis. The patient denies any auditory or visual hallucinations, but admits to previous diagnoses of delusional disorder, schizophrenia, and bipolar disorder. Prison records were not available, the urology team was impatiently waiting nearby, and the ED nurse is holding the patient's penis at the base to minimize further bleeding. Blood pressure is stable, but the patient is slowly become more tachycardic indicating volume loss.
Discussion
Arguments could be made that his decision was based on either psychosis or gender dysphoria. His self-reported history of psychosis may tempt many physicians to claim incapacity, however patients with such diagnoses often still have capacity to make medical decisions. Since the patient did an acceptable job of explaining the risks and benefits of the procedure and was well aware of the consequences of refusing treatment, the capacity decision became more complicated. Given the context of his behavior as well as the irrationality of cutting his penis using a homemade guillotine, the patient was likely experiencing delusional disorder more so than gender dysphoria and was deemed to lack capacity. We will present criteria and guidelines for capacity evaluations in difficult and near emergent situations. We will discuss common diagnoses causing incapacity and the role of the psychiatrist in treatment and management.

**NO. 138**

**UP AT NIGHT: IS SLEEP DISTURBANCE A SYMPTOM OR A SEPARATE DISORDER IN ACTIVE MILITARY SERVICE MEMBERS?**

*Lead Author: James Palmer, D.O.*
*Co-Author(s): Gwen Leviit, D.O., Jennifer Weller, Ph.D.*

**SUMMARY:**
Background: Studies suggest that military personnel have high rates of insomnia, a known risk factor for the development of posttraumatic stress disorder (PTSD) and other psychiatric conditions. Long, unpredictable work hours along with conditions of combat may promote sleep disturbance. Service members (SMs) with combat-related PTSD often report an unwillingness to fall asleep for fear of nightmares and sleep-related reactions. Physicians often prescribe multiple medications to target sleep difficulties, in addition to medications for the SM's "primary" psychiatric diagnosis, often with limited success in resolving sleep disturbance.
Methods: Investigators collected demographic and clinical variables from medical records of 121 psychiatric inpatients treated in a community hospital unit specializing in SM psychiatric care. Records were reviewed from a 1.5-year period (2012 to 2013). Data from records were compared and contrasted with information available online from the Veteran's Administration (VA).
Results: Ten percent of SMs at the community hospital were admitted with an insomnia diagnosis, and 17% of these patients had a prescription for sleep aid medications. On discharge, 7% of these SMs were diagnosed with a sleep disorder and 33% were discharged with sedatives. Among patients with PTSD, 50% were discharged with sleep aid medication but without an insomnia diagnosis, whereas 8% were discharged with diagnosis and a sedative. Multiple drug trials and combinations of pharmacotherapy were utilized in the hospital; seven (11%) of SMs with a PTSD diagnosis were discharged on two sedatives and one SM was prescribed three sleep aids. Despite the high rate of comorbid alcohol use, zolpidem was the most commonly prescribed medication. Outpatient VA data indicated that 41.7% of veterans met criteria for insomnia, with 24% using prescription sleeping aids or bedtime alcohol. Another VA report on data accumulated since 2001 documented a rate of 54% of military personnel suffering with insomnia. A 2010 survey at Madigan Army Medical Center reported that 85% of soldiers were diagnosed with insomnia (and 50% of those patients had sleep apnea).
Conclusions: The DSM-5 highlights an ongoing need for attention to sleep disturbance and its relations to and interactions with other psychiatric disorders. Data on SMs in this study suggested that sleep disturbances were identified and treated with pharmacotherapy despite a lack of a formal diagnosis of insomnia. Further research is necessary to identify the risk factors for sleep disturbances in SMs and to understand if these problems arise as a consequence of combat experiences, comorbid psychiatric illnesses, coping strategies to avoid nightmares, sleep

apnea, and/or other medical conditions. With increased information, more successful treatments can be designed to address this very significant issue among SMs.

**NO. 139**

**PSYCHIATRIC COMORBIDITY AND TREATMENT PERSISTENCE IN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: RETROSPECTIVE ANALYSIS OF PATIENTS' MEDICAL RECORDS**

*Lead Author: Jiung Park, M.D.*
*Co-Author(s): Bongseog Kim, M.D., Ph.D.*

**SUMMARY:**

Introduction)
Although there is robust evidence for psychostimulants as first-line treatment, many Attention-deficit/hyperactivity disorder(ADHD) patients and their parents hesitate to initiate treatment for many reasons. A variety of studies suggested factors associated with treatment persistence such as age, socioeconomic status, comorbidity, severity, IQ, patients' or parents' attitude to medication and so on, but these findings are inconsistent across the individual studies.
Objectives)
The aim of this study was to identify factors for treatment persistence of ADHD patients based on objective tools such as Kiddie-Schedule for Affective Disorders and Schizophrenia-Present and Lifetime Version-Korean Version(K-SADS-PL-K), Korean Wechsler Intelligence Scale for Children(K-WISC), and the Clinical Global Impressions-Severity scale(CGI-S).
Methods)
A total of 100 ADHD patients aged 5-16(88 males, 75 childrens, 25 adolescents) who completed K-SADS-PL-K, K-WISC were extracted from Sanggye Paik hospital medical records from 2009 to 2013. Patients were classified into treatment-persistent group(n=43) and nonpersistent group(n=57) by whether they persisted treatment at 6 months of follow-up. Characteristics between two groups were compared by student's T-test and Chi-square test. All analyses were done with SAS enterprise 4.2 and $p<0.05$ was considered statistically significant.
Result)
Comparing treatment-persistent group, treatment-nonpersistent group had significantly higher proportion of adolescents(33.3% vs 14.0% [$x2 = 4.91$, $P = .03$])and showed increased likelihood of poor parental relationship(25.49% vs 11.11% [$x2 = 6.23$, $P = .04$] ). Although comorbid major depressive disorder was more prevalent in treatment-nonpersistent group(12.3% vs 0% [$x2 = 5.67$, $P = .02$]), overall(56.14% vs 48.84%) and other major psychiatric comorbidity showed no difference between two groups. Also, we could not find out any difference of IQ, CGI-S score, peer relationship and academic achievement between two groups.
Conclusions)
This study suggests adolescence, comorbid depression and poor parental relationship are associated with lower persistence of ADHD treatment. We assumed patients' motivation for treatment is more affected by those factors which might weaken parental influence on them, rather than by severity of symptoms or impairment of the disorder itself.

**NO. 140**

**DYSPHORIA AND SUICIDALITY WITH SUDDEN DECREASE IN DEEP BRAIN STIMULATOR VOLTAGE IN A PATIENT WITH PARKINSON'S DISEASE: A CASE REPORT**

*Lead Author: Ankit A. Parmar, M.D., M.H.A.*
*Co-Author(s): Rashmi Parmar, M.D., Deepti Vats, M.D., Manish Aligeti, M.D., M.H.A.*

**SUMMARY:**

Deep Brain Stimulation (DBS) is a novel surgical intervention commonly used to treat tremors in Parkinson's disease, essential tremors, dystonia and obsessive-compulsive disorder. There have been several case reports discussing adverse effects of DBS on mood and worsening of underlying psychiatric disorders, likely secondary by affecting the neuronal projections in the midbrain region leading to oscillatory changes in dopamine release 1, 2. The immediate effects of DBS voltage changes on dysphoria and suicidal behavior have not yet been widely studied. This poster describes a 59 y/o Hispanic female with Parkinson's disease treated by bilateral thalamic DBS and anti-parkinsonian medications who presented to the ER with manic symptoms. As patient did not have any significant past psychiatric history, a consideration was made that the DBS could have been the likely cause for her manic symptoms. Within 24 hours of decrease in the DBS voltage, the patient became dysphoric, tearful, with passive suicidal ideations. Although the exact mechanism by which DBS affects mood is still unclear, it might be imperative to screen patients, undergoing DBS voltage adjustments, for psychiatric symptoms including suicidality. In addition, neurologists should also work closely with psychiatrists both at the time of initial DBS implantation as well as with every voltage adjustment thereafter.
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**NO. 141**

**OBSTRUCTIVE SLEEP APNEA: DOES IT INCREASE THE RISK OF MILD COGNITIVE IMPAIRMENT**

*Lead Author: Ajay Parsaik, M.D.*
*Co-Author(s): Ajay K Parsaik MD, Rosebud O Roberts MBBCh, Balwinder Singh MD, Shane Pankratz PhD, Kelly K. Edwards, Yonas E Geda MD MSc, Michelle Mielke PhD, Suresh Kotagal MD, Bradley F Boeve MD, Ronald C Petersen MD PhD*

**SUMMARY:**

Abstract:
Background: The association between diagnosed mild cognitive impairment (MCI) and obstructive sleep apnea (OSA) is not clear.
Objective: To evaluate the cross-sectional association between OSA and cognition (diagnosis of MCI and domain-specific cognitive performance) in a large population based cohort.
Methods: Participants were selected randomly from Olmsted County, Minnesota, USA, who were aged 70–89 years on October 1, 2004 and were without documented prevalent

dementia. After inclusion, all study participants underwent an in-person interview, neurological examination and neuropsychological testing that assessed nine tests covering four cognitive domains (memory, attention and executive function, visuospatial cognition, language). Subjects were diagnosed by consensus as cognitively normal, MCI or dementia according to the published criteria. Ascertainment and severity of OSA was recorded from a medical records-linkage system (EMR) using standardized criteria. Subjects were defined as having confirmed OSA if they had apnea-hypopnea index (AHI) >5 on polysomnogrphy, further subclassified into mild (AHI 5-15) , moderate (AHI 16-30) and severe OSA (AHI>30). Whenever polysomnography was not available, but OSA was a documented diagnosis in EMR by sleep physician, we classified it as probable OSA.
Results: Of 2,050 subjects, 144 were excluded (67 dementia, 6 incomplete assessments, 41 did not give authorization to use their medical record for research purpose). A total of 1,936 subjects were included in the analysis, of which 189 had OSA (30 probable OSA, 159 confirmed OSA; 30 mild OSA; 53 moderate OSA; 76 severe OSA). Mean age was 80 ± 5.2 years with 51.4% males.
After adjusting for covariates (age, gender, education years, ApoE ε4, depression, diabetes, hypertension, stroke, BMI and coronary artery disease) we found no association between any OSA and MCI [OR 1.22 (95% CI 0.81-1.84). No effect of gender interaction and BMI was observed on these effects. Similary, we did not find association of MCI with confirmed OSA only (OR 1.27 (95% CI 0.81-1.97) after adjusting for covariates. Adjusted OR for association of MCI with mild, moderate and severe OSA was 1.56 (95% CI 0.61-3.96), 1.02 (95% CI 0.47-2.25), 1.34 (95% 0.77-2.44), respectively.

Linear regression model showed no significant association of all OSA, confirmed OSA and/or severe OSA with four cognitive domains [memory (p=0.76, p=0.65 and p= 0.95, respectively), language (p=0.54, p=0.28 and p=0.42, respectively), visuospatial (p=0.3, p=0.74 and 0.88, respectively) and attention (p=0.16, p=0.16 and 0.75 respectively)].
Conclusion: In this cross-sectional study derived from a population-based cohort of eldery, OSA was not associated with MCI or with performance in continuous measures of cognitive performance. Our findings need to be validated in a prospective cohort study.

**NO. 142**

**NEUROMYELITIS OPTICA PRESENTING WITH PSYCHIATRIC SYMPTOMS AND CATATONIA: A CASE REPORT**

*Lead Author: Rachit Patel, M.D.*
*Co-Author(s): Abdulkader Alam, M.D., Patricia Fertig, D.O., Briana Locicero, B.A.*

**SUMMARY:**

Objective: Report a case of NMO presenting with catatonia.
Background: Demyelinating diseases such as Multiple Sclerosis (MS) have a higher prevalence of mental illness than the general population. Neuromyelitis Optica (NMO) is an aggressive demyelinating disease that characteristically affects the spinal cord and optic nerves and has recently been differentiated from MS. There is only one reported case of a patient with NMO presenting with psychiatric symptoms but no reported case of NMO presenting with catatonia. Case: A 16-year-old Antiguan female with NMO presented with a one-week history of altered mental status and agitation. On exam, she was found to have cognitive impairments (MOCA score 17/30) as well as symptoms of psychosis including delusional thinking, auditory and visual hallucinations. On the Bush Francis Catatonia Scale she had a positive score in 11/23 domains consistent with a diagnosis of catatonia: excitement, immobility, mutism, staring, posturing, waxy flexibility, echolalia, verbigeration, withdrawal, perseveration and combativeness. MRI Brain/C-spine/T-spine with gadolinium showing multiple hyperintense, non-enhancing lesions, presence of oligoclonal bands in the CSF and serum aquaporin-4 antibody level >160 U/ml (normal <1.6 U/ml) were consistent with a diagnosis of NMO. Extensive testing was performed to rule-out other infectious, oncologic or genetic etiologies, which were all negative. Neurological illness was treated with azathioprine, steroids, intravenous immunoglobulin, plasmapheresis and rituximab. Psychosis and catatonia were treated with lorazepam followed by risperidone six days later. Lorazepam and risperidone were titrated up to 1.5mg/day and 2mg/day, respectively with only some improvement in catatonic and psychotic symptoms. Conclusion: Our case confirms one prior report that NMO can present with psychiatric symptoms. In addition, this is the first case in the literature that illustrates NMO presenting with catatonia. The patient received treatment for catatonia and psychosis. However, improvement was slow suggesting that the treatment of catatonia in the setting of a neurological illness such as NMO can be challenging. Further studies are needed regarding the association between these two syndromes as well as the treatment approach.

**NO. 143**

**ASEXUALITY: THE NO LONGER INVISIBLE ORIENTATION**

*Lead Author: Mitali Patnaik, M.D.*
*Co-Author(s): Dr. Wei Du, M.D., Dr. Donald Kushon, M.D., Dr. Charles Stanfa, D.O., Dr. Celia Varghese, M.D.*

**SUMMARY:**

Background: Four different approaches have been proposed to define asexuality based on (a) absence of sexual behavior, (b) absence of sexual attraction, (c) self-identification as asexual, or (d) a combination of these. Most current research on asexuality focuses on the aspect of an individual's lack of sexual attraction. Early studies showed that asexual women were more vulnerable to have a psychiatric disorder compared with asexual men. Past studies also suggested asexuality is a byproduct of an atypical social functioning, rather than its cause. We present a case of an asexual woman with bipolar disorder on long-term SSRIs to explore management options and how to address sensitive sexuality issues.
Case: 21 year-old Caucasian female with history of bipolar disorder and alcohol abuse was transferred to inpatient psychiatry unit for suicidal attempt status post overdose on topiramate, lamotrigine, eletriptan, buspirone and fluoxetine after an argument with boyfriend. On admission, patient complained of depressed mood, insomnia, poor appetite and anhedonia with no evidence of psychosis or mania. Interestingly, she reported that she had never experienced sexual desire for either sex and has been involved in romantic non-sexual relationships. She is also a member of the Asexual Visibility and Education Network (AVEN), an online network where many self identified asexual

people meet. Patient has not had a successful long-term relationship and her current boyfriend was also an AVEN member. She was restarted on topiramate 200 mg daily (migraines), buspirone 10 mg three times daily, clonazepam 0.5 mg twice daily for anxiety symptoms and risperidone 0.5 mg twice a day for mood stabilization. As this patient was on sertraline for long time and continued to report significant depressive symptoms, sertraline was restarted at 100 mg daily. Patient responded well to medications and supportive therapy with significant reduction of depressive symptoms but continued to voice lack of sexual attraction. Although sexual dysfunctions are associated with SSRIs, patient's continued asexuality manifested as lack of sexual desire appears to be unrelated to the chronic treatment or the restart of sertraline.
Discussion: Loss of libido and sexual desire are well-known side effects of SSRIs and can also be part of depressive symptoms. However, it is vital to consider that sexuality is a personal choice and asexuality as a group is an emerging phenomenon in our social structure. For patients who suffer from mood disorder and are being asexual, treatment response in affective symptoms may not lead to dissolution of asexuality. As clinicians, one should pay attention to the role of lifestyle choices in clinical diagnosis and assessment of treatment response.
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**NO. 144**

**TRAZODONE USE FOR INSOMNIA RESULTING IN 'ACTIVATION': TWO CASE REPORTS**

*Lead Author: Varma Penumetcha, M.D.*
*Co-Author(s): Kamalika Roy,2, M.D., Bakul Parikh,1, M.D., and Pankaj Lamba,1, M.D.*

**SUMMARY:**

Trazodone belongs to the serotonin antagonist and re-uptake inhibitor (SARI) class of antidepressants and has been shown to possess some anxiolytic and hypnotic activity. Currently, the off-label use of trazodone for the treatment of primary or secondary insomnia is the most frequent reason for its prescription in the USA and it is the second-most commonly prescribed agent for treating insomnia. Here we would like to report two cases which demonstrate its use for insomnia could cause activating symptoms, resulting in, insomnia or a manic switch.
Case 1: A 71-year-oldfemale was evaluated for continuity of care. She had MDD in partial remission and Anxiety Disorder NOS on evaluation. The PHQ9 was 6 with difficulties with sleep, predominantly with initiation almost every night. She has tried melatonin and alprazolam on a P.R.N basis with minimal success. She was advised to take trazodone, starting at 25 mg QHS andtitrating to 100 mg based on her response. Two days later she called the clinic to report that she couldn't sleep after taking trazodone, had slept only 2-3 hrs each night. She reports to have felt activated after taking it although she did not endorse other symptoms of hypomania or mania. Her sleep got adjusted to baseline after discontinuing trazodone and taking 0.25 mg of Alprazolam the next day.
Case 2: A 33-year-old female evaluated for continuity of care. She had PTSD and Mood Disorder NOS on evaluation. One of her chief complaint was insomnia, problem with initiating and maintaining sleep. She was started on lamotrigineand trazodone at 25 mg QHS and advice to titrate to 100 mg based on response. After two weeks, she reported using trazodone 50 mg QHS; and having easier time falling asleep, and sleeping about 5hrs per night. We advised to try increasing the trazodone dose to 100 mg. Two weeks later the patient's affect was euphoric and she endorsed other symptoms of hypomania and was sleeping on average only 3 hrs per night and yet feeling energetic the next day. At this time patient presented additional history, which suggested she was having a switch in mood and was diagnosed with Bipolar Disorder. Trazodone was discontinued and she improved over the next 4-5 days and her mood became euthymic to slightly depressed.
Discussion: According to our review of the literature, there are only ten reported case of trazodone associated with onset of hypomanic or manic symptoms. Additionally trazodone causing insomnia possibly via the activating and anxiogenic properties of its metabolites has been mentioned in the literature.
In the light of the fact that it's the first drug most psychiatrists would prescribe for insomnia, these two cases demonstrate that psychiatrist's should be aware that it can be 'Activating' and in rare cases it could cause insomnia and make them hypomanic or manic.
References:
1) Trazodone-induced transient hypomanic symptoms and their management. BJP 1991, 158:275-278

**NO. 145**

**A CASE OF BIPOLAR DISORDER WITH PSYCHOTIC FEATURES OR A MODERN-DAY CASE OF NEUROSYPHILIS?**

*Lead Author: Alena Petty, D.O.*
*Co-Author(s): Dennis Friedman, D.O., Matthew Markis, D.O.*

**SUMMARY:**

BACKGROUND:
Neurosyphilis was responsible for up to 10% of all first psychiatric hospitalizations prior to 1945, and most patients died within 5 years. Since the advent of antibiotics, however, the incidence of syphilis has decreased significantly. The rate of syphilis in the US has actually increased almost annually since 2001, with a significant increase in certain geographic locations and within particular populations, especially men who have sex with men. Although overall the incidence of syphilis remains very low, neurosyphilis, when present, still has dire consequences, including profound personality changes, depression, mania, and psychosis, not to mention the other catastrophic or life-threatening consequences of this infection.
CASE REPORT:
Mr. N was a 39 year old Hispanic male admitted to our urban voluntary inpatient psychiatric unit for depression and SI in August 2012. He worked as a Christian minister and gave a credible history of sexual abstinence for 20 years. He had no psychiatric problems prior to 2011, when symptoms of severe anxiety, depression, psychosis, and SI began. At admission to our facility, he reported AH and possible history of mania. CBC, CMP, B12, and folic acid were all normal at admission, but RPR was reactive. He then admitted he had engaged in high-risk sexual behavior 20 years prior, with a partner who later that year died of AIDS. RPR titer was 1:16, FTA Ab was reactive, and CSF was clear, colorless, with 7 WBCs, with lymphocytic predominance, and elevated protein. He was transferred to medicine for treatment of neurosyphilis with IV penicillin. He

continued outpatient psychiatric follow-up in our clinic, but over the following 4 months, he had 3 more hospitalizations for psychosis, as well as numerous presentations to EDs and urgent care centers. He reported both AH and VH, and at times he demonstrated bizarre behavior, including taking a radio apart and trying to eat a wallet. Throughout his treatment, various antipsychotics, mood stabilizers, and anxiolytics were tried, all with limited response. 4 months after treatment of neurosyphilis, his RPR titer was down to 1:8, and by April 2013, Mr. N was stable and symptom-free on a simpler medication regimen than at any time during the previous 8 months.
DISCUSSION:
It is quite possible that Mr. N's psychiatric symptoms were due to neurosyphilis rather than a primary psychiatric disorder. Though he showed significant improvement 8 months after treatment with IV antibiotics, we may never know the cause of Mr. N's symptoms as he also received intensive psychiatric treatment before moving out of state. Routine screening of syphilis in psychiatric patients remains controversial due to the very low incidence of this disease in the US, but given the potential dire consequences of untreated neurosyphilis, testing should still be considered in high-risk individuals with new onset of psychiatric symptoms or symptoms that are unusual or refractory to treatment.

**NO. 146**

**EMBRACING PAST TRAUMA: A STUDY COMPARING PROLONGED EXPOSURE THERAPY AND A MINDFULNESS-BASED PTSD TREATMENT**

*Lead Author: Asa Pharr, M.D.*
*Co-Author(s): Matthew Yoder, Ph.D., Kristy Center, Ph.D., Aaron Miller, Ph.D*

**SUMMARY:**

Background: Current research suggests exposure therapy is one of the most effective treatments available for PTSD (IOM, 2007). Despite the effectiveness of exposure therapy in treating symptoms of PTSD, a portion of patients who complete treatment retain the diagnosis of PTSD (e.g., 35% of completers; Foa et al., 1999). In addition, there are clients who will opt out of exposure therapy and a minority of patients that do not tolerate treatment. Therefore, second-line and supplemental treatments continue to be required and explored. One modality that appears promising is mindfulness-based treatment. Recent research suggests that mindfulness interventions may provide a reduction of PTSD and depression symptomatology (Owens, Walter, Chard, & Davis, 2011; Smith et al., 2011).
Methods: Veterans referred to the VA PTSD team (N = 40) were randomly assigned to either Prolonged Exposure (PE) or a Mindfulness-based PTSD treatment (MBPT). The MBPT protocol was constructed by integrating Mindfulness-based stress reduction principles (MBSR), as well as other mindfulness practices. The MBPT protocol matched the duration of PE treatment (90 min session and 10 sessions). Baseline measures including the Clinician Administered PTSD Scale (CAPS) and Mindful Attention Awareness Scale (MAAS) were completed prior to treatment and within three weeks of treatment completion. In addition, therapists were interviewed after data collection to determine the acceptability of MBPT.
Results: Both the PE group and the MBPT group had significant decreases in CAPS scores. In addition, there was a positive clinician response to MBPT. The data also suggests that MBPT was effective in increasing mindful attention in the sample.
Conclusion: Evidence from this study suggests that using mindfulness interventions as augmentation to exposure therapies is feasible and tolerable to patients with PTSD and may be an appropriate supplemental treatment to front-line exposure therapies.

**NO. 147**

**SERTRALINE-INDUCED HYPOGLYCEMIA: A CASE REPORT**

*Lead Author: Nyota Pieh, M.D., M.P.H.*
*Co-Author(s): Michael Serby, M.D.*

**SUMMARY:**

Purpose: Certain antidepressants, including selective serotonin reuptake inhibitors (SSRIs) may lead to hypoglycemic episodes (1-3). Fluoxetine, sertraline, and paroxetine can lead to increased insulin sensitivity in humans (4-6); fluoxetine and venlafaxine may enhance insulin secretion (7). With these associations in mind, we present a case of new-onset hypoglycemia in a non-diabetic patient treated with sertraline.
Case Summary: A 40 year old female with a history of Major Depressive Disorder and no significant medical history, presented to the emergency room (ER) with hypoglycemia after a near-syncope episode and weakness. A random blood glucose drawn was found to be 51. An oral glucose solution improved her blood glucose level. She subsequently experienced 2 more episodes of hypoglycemia warranting ER visits. Each time she required an oral glucose solution. The patient then underwent a full work-up including an abdominal ultrasound to rule out an insulinoma, all of which were normal. One month prior to the first ER visit, the patient's sertraline dose was increased from 25 to 50mg to treat depression. Sertraline was discontinued after the third episode of hypoglycemia, and the patient had no further hypoglycemic episodes. These episodes of hypoglycemia appeared to coincide with the increase in dose of sertraline from 25 to 50mg.
Discussion: It is apparent that isolated cases of antidepressant-induced lowering of blood glucose like the one described above do occur. A Dutch study found usage of SSRIs for 3 years was associated with a 2.75 hazard ratio of risk for "severe hypoglycemia" (8), suggesting this may be more than an isolated phenomenon. A review of the literature provides support for this possibility.
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**NO. 148**

**"DOC, MY BABY JUST DIED": TREATMENT OF FACTITIOUS PREGNANCY IN AN ACUTE SETTING**

*Lead Author: Andrew J. Pierce, M.D.*
*Co-Author(s): Ana E. Turner, M.D., Tessy Korah, M.D., Amelia Davis, M.D., Almari Ginory, D.O.*

**SUMMARY:**

Factitious Disorders, including those manifesting as a reported pregnancy, have important consequences for psychiatrists and society at large. Barriers to prevalence determination of Factitious Disorder, including patient deceit and legislation protecting patient information, make exact determination difficult; however, studies indicate a high burden of cost and emotional affliction generated by these patients.(1, 2) Scant literature exists discussing the properties of appropriate intervention for Factitious Disorder manifesting as reported pregnancy in the acute psychiatric setting. We present the case of Ms. M, a 50 year old AAF with a past psychiatric history significant for bipolar disorder by report who presented after threatening to end her life. The patient called her sister and told her she felt depressed and that she wanted to end her life secondary to the death of her newborn baby one week prior. Her sister then called LEO who instituted the involuntary commitment of the patient. The patient stated she was full term and that the baby only survived a few minutes post-natally before passing away in the hospital. She stated that the father of the baby blamed her for the baby's death because she drank alcohol during the first five months of the pregnancy. The patient stated, "I was as surprised as you are that I could be pregnant at 50!" Ms. M reported that she had the baby cremated shortly after death and was very anxious about leaving the hospital to make funeral arrangements for the baby, which was three days away. Brief chart review revealed that the patient had a surgical history of a hysterectomy and laboratory findings contradictory to her claim of pregnancy. We will discuss three goals in the treatment of this patient: 1. Patient safety, especially in regards to leaving treatment to attend the funeral, 2. Elucidating whether this pregnancy was true, delusional, factitious, or malingering, and 3. Treating such symptoms in the acute setting. Long term follow-up is challenging in Factitious Disorder patients however studies show positive clinical outcomes can be achieved by psychotherapy implemented on an outpatient basis. (3, 4)

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**NO. 149**

**CO-OCCURRING SOMATIC SYMPTOM DISORDER AND SEXUAL ADDICTION: A CASE PRESENTATION**

*Lead Author: Scott R. Polick, D.O.*
*Co-Author(s): Bruce M. Gimbel, M.D.*

**SUMMARY:**

Introduction: Somatization Disorder, or Somatic Symptom Disorder (SSD) as it is now referred to in the Diagnostic and Statistical Manual (DSM-V), is a rare condition, estimated to occur in less than 1% of the female population (DSM-V). The disorder also has a vast history, with case reports stretching back to the time of Hippocrates, who believed the disorder was a result of the movement of the womb, or hytereon. The disorder causes extreme psychological anguish, and can be costly to pursue as well. Oftentimes patients with SSD have multiple medical diagnoses, and undergo invasive and potentially harmful procedures with little to no benefit. Accurately diagnosing and treating the condition can prevent excessive utilization of limited resources and also save the patient from an unnecessary medical burden. Case Description: The patient is a 38 year old never married Caucasian female with a history of chronic abdominal and pelvic pain, migraines, opiod dependence, and vaginismus. She presented to the outpatient psychiatric clinic at the request of her primary care physician, who told her that if she did not address her childhood sexual abuse her pain would not go away.
The patient has struggled with abdominal pain since the age of 14, when she was diagnosed with Irritable bowel syndrome. At age 18 an appendectomy was performed. Many years later, at the age of 27, a bladder hydrodistension was performed for chronic interstitial cystitis. Following this procedure, the patient's abdominal and pelvic pain became much worse, and several diagnostic and exploratory surgeries were performed. She continues to struggle with pelvic pain, despite having had a cholecystectomy, an exploratory laparoscopy, a total abdominal hysterectomy with bilateral oophorectomy, four colonoscopies, two EGDs, and one nuclear gastric emptying study.
She has had trials of paroxetine, sertraline, fluoxetine, citalopram, venlafaxine, nortriptyline, diazepam, clonazepam, and gabapentin. Her pain improved significantly from a rating of 9/10 to 4/10 following treatment with the combination of fluoxetine and nortriptyline. Discussion: This case demonstrates the significant psychological, medical and financial impact of SSD. Despite the numerous surgical interventions, the patient's pain persists to this day, albeit at a lesser severity following treatment with nortriptyline. SSD, unlike the previous diagnosis of Somatization disorder, no longer requires a specific number of complaints. The diagnosis now consists of having at least 6 months of distressing and impairing somatic symptoms associated with disproportionate and excessive thoughts, feelings and behaviors regarding the symptoms. With timely diagnosis and empathic treatment, excessive and potentially harmful procedures may be prevented.

**NO. 150**

**TREATMENT OF CANNABIS WITHDRAWAL SYMPTOMS: A CASE REPORT**

*Lead Author: Dara Pumphrey, M.D.*

**SUMMARY:**
Introduction: Moderate to severe cannabis use disorder (or cannabis dependence in DSM-IV terminology) is thought to affect 9% of all individuals in the United States who have used marijuana. Many of these individuals suffer from negative legal and social consequences from this drug; in addition to negative health consequences. Many of these individuals experience withdrawal symptoms when discontinuing this drug. Treating these symptoms is vital in preventing relapse, psychiatric co-morbidity, and co-morbid substance use. In this case report I describe a patient who developed symptoms of anxiety and depression which were treated with lorazepam and escitalopram.
Case: Patient is a 31 year old man with a history of moderate to severe cannabis use disorder, pericarditis (resolved) who presented to the emergency department for symptoms of panic. He was referred to the emergency department by his cardiologist for psychiatric evaluation of his symptoms of anxiety and depression. Patient reported general worsening of anxiety symptoms over the preceding weeks; in association with discontinuing marijuana after years of daily use. He endorsed shortness of breath, tingling in his extremities, and a sense of dread. He spent considerable time worrying that symptoms would return and was increasingly isolative; but not to the point of developing agoraphobia. He also endorsed symptoms of depression including low mood, hopelessness, disrupted sleep, difficulty concentration, excessive guilt, and decreased energy. Patient was advised to continue to refrain from marijuana and other illicit substances, which he did during the remainder of the treatment period. He was started on escitalopram which was titrated up to 10mg with resolution of his symptoms of depression and anxiety. During the one month titration period he used 1mg of lorazepam as needed for panic symptoms. After one month he no longer needed to take lorazepam for any breakthrough anxiety symptoms and his symptoms of anxiety and depression had entirely remitted. He continued to take escitalopram at 10mg daily for a period of six months following the remission of his symptoms and then elected to discontinue treatment with no further recurrence of symptoms.
Discussion: Long term heavy use of cannabis is associated with discontinuation symptoms. Prior studies have indicated that withdrawal symptoms can last for several weeks and tend to involve fatigue, yawning, sleep disruptions, irritability, anxiety, depression, and a sense of physical tension. The above case suggests that SSRIs may be helpful in treating mood and anxiety symptoms associated with discontinuation of cannabis.

**NO. 151**

**TAKOTSUBO CARDIOMYOPATHY IN A PATIENT WITH CHRONIC PSYCHOLOGICAL STRESS: A CASE REPORT**

*Lead Author: Abhishek Rai, M.D.*
*Co-Author(s): Jain Lakshit,M.B.B.S, lly Taranjeet,M.D, Nabila Farooq,MD*

**SUMMARY:**
INTRODUCTION
Takatsubo cardiomyopathy is a reversible heart condition with clinical presentation similar to acute myocardial infarction. While many case reports have established acute emotional stress as an etiological factor; the reasons for such stresses are incredibly diverse, ranging from organic to psychiatric diseases. We report a case of takatsubo cardiomyopathy seen at our medical center with no evident acute emotional crisis to be blamed but patient was under chronic stress due multiple long-standing stressors in her immediate family.
CASE REPORT
Our patient was a 67 year old married Caucasian female, brought to the ER with complaint of chest pain. No significant coronary obstruction was present. A subsequent 2D Echocardiogram revealed that mid to distal regions of left ventricle and apex were a kinetic, with a hyper dynamic basal segment and abnormal diastolic function with an elevated left atrial pressure. Her psychiatric history and examination were negative for any signs or symptoms of major psychiatric disorder but the detailed history revealed multiple family members affected by bipolar disorder, two of them with suicidal tendencies; significant socio-economic stressors affecting of her entire family and a long history of marital discord with her husband who also suffers from bipolar disorder, for which she consulted a psychiatrist around 20 years back but did not follow up.
CONCLUSION:
While presenting in the ER the patient did not mention any history of an acute emotional stressor. In fact the multiple, chronic stressors affecting her seem to play an important etiological role in the clinical manifestation. Most of the reported cases hold acute stressors as the chief culprits responsible for the causation of takotsubo cardiomyopathy and that relation between chronic stress and takatsubo cardiomyopathy is widely undocumented. In the available literature we came across just one case report connecting chronic stress to this disease. Our case report is an add on to the scant literature on chronic stresses leading to the development of takotsubo cardiomyopathy.

**NO. 152**

**TOCOPHOBIA: CASE REPORT AND REVIEW OF THE LITERATURE**

*Lead Author: Harita Raja, M.D.*
*Co-Author(s): Aimee Danielson, Ph.D., Catherine Roca, M.D.*

**SUMMARY:**
Background: Tocophobia is the specific anxiety and fear of death during childbirth that precedes pregnancy and is so intense that childbirth is avoided whenever possible. It was first described in the literature by L.V. Marce in 1858: “If they are primiparous, the expectation of unknown pain preoccupies them beyond all measure (primary tocophobia), and throws them into a state of inexpressible anxiety. If they are already mothers, they are terrified of the memory of the past and the prospect of the future (secondary tocophobia).” Tocophobia has presented itself in the literature in the context of increased Cesarean sections, though has had limited emergence in the context of psychiatry.
Case Report: We present a case report of a patient with tocophobia. The patient is a married 29 year old doctoral student with no previous psychiatric history who initially presented with tocophobia in the context of recently being married. She described discomfort not only with childbirth, but also with pregnancy and parenthood. She had difficulty being around pregnant women, watching shows about childbirth or even seeing photos of women who were pregnant. There were multiple psychosocial stressors that contributed to her fears.

Her parents were divorced at a young age, during which time the patient took on a parental role for her younger siblings. She also saw the birth (an uncomplicated vaginal delivery) of her younger sister at the age of 10, which she describes as traumatic. This patient characterizes pregnancy as a major loss of control. She has had body image issues as well, with eating disorder tendencies. She initially refused any psychotropic medications and underwent behavioral therapies including exposure and relaxation. Most recently, she has agreed to take medication and has been started on escitalopram and alprazolam as needed, which have been beneficial for her.
Discussion: Tocophobia, or the fear of childbirth, is generally looked upon as a single issue. However, it may mask other psychosocial factors. For example, in this case, there were other concerns including generalized anxiety, trauma, family dysfunction and body image issues. This case demonstrates a complex case of tocophobia.
Conclusion: Given the complexity of a patient with tocophobia, it is essential for psychiatrists and obstetricians to work together to provide support to these patients.

**NO. 153**

**ATYPICAL NMS: IMPLEMENTATION OF LEVINSON'S CRITERIA SHOWING POSITIVE RESULTS IN DIAGNOSING THIS CHALLENGING PROBLEM**

*Lead Author: Mahreen Raza, M.D.*
*Co-Author(s): Aikaterini Fineti, M.D., Najeeb U Hussain, M.D.*

**SUMMARY:**
NMS is an idiosyncratic reaction to anti-psychotic medication. It used to be caused by dopamine antagonism due to typical antipsychotics. With advent of newer antipsychotics, the presentation varies that creates difficulty in diagnosing a condition promptly. Since it's a diagnosis of exclusion, atypical presentation can lead to misdiagnosis and can lead to fatal consequences. On the other hand if NMS occurs due to atypical antipsychotics, fever, rigidity, and possibly, death may be less frequent. So in both the cases, diagnosing someone with NMS is not that simple and that needs diligence.
Case Report:
Here we describe our patient of 85 year old male patient on atypical antipsychotics with NMS who presented with atypical features. Patient had prolonged hospitalization for altered mental status. When no etiology could be discovered, he was treated for presumed Neuroleptic Malignant Syndrome (NMS) in context of high levers, some igidity, and autonomic instability. Most symptoms clusters improved with empiric treatment with benzodiazepines but mental status never improved. He was transferred to another hospital for evaluation for possible Electroconvulsive therapy (ECT). There he underwent another extensive, unrevealing work-up and did not received ECT as NMS and catatonia were not felt to be present. Patient was transferred back to the hospital for continuation of care.
Discussion:
In our patient we found that high diligence was required to find the subtle symptom profile. We should have low threshold for initiating treatment to avoid lethal consequences. We should not only rely on strict major criteria but can have minor criteria while looking for symptoms of NMS. Levinson's criteria is the way to go in that where a set of major and minor criteria give opportunity to diagnose with ease and avoid problems that can result without treatment of NMS. In patients receiving any antipsychotic, clinicians should carefully evaluate any features of NMS and should not prematurely exclude a diagnosis of NMS in cases where severe rigidity or hyperthermia is not initially apparent. Levenson's criteria for the diagnosis of NMS (Presence of 3 major or two major and four minor signs indicate a high probability of NMS). Neuroleptic malignant syndrome (NMS) is usually a self-limited disorder, with most cases resolving within 2 weeks after antipsychotic drug discontinuation but it could have varied presentation. There remains a question whether this atypical presentation represent early or impending NMS where severe rigidity or hyperthermia is not initially apparent.

**NO. 154**

**QUESTIONING THE CLINICAL UTILITY OF THE ADULT ADHD SELF-REPORT SCALE (ASRS) IN SCREENING FOR ADHD IN ADULTS WITH SUBSTANCE USE DISORDERS**

*Lead Author: Maria M. Reyes, M.D.*
*Co-Author(s): Terry D. Schneekloth, M.D.*

**SUMMARY:**
Untreated ADHD is associated with higher relapse rates and poorer outcomes in adults with substance use disorders, underscoring the importance of screening and treatment of ADHD in this population. The Adult ADHD Self-Report Scale (ASRS) is an eighteen item questionnaire that is commonly used to screen for ADHD in both clinical and research settings. Limited data exist on the validity of the ASRS when screening for ADHD in adults with substance use disorders. The few existing studies have used the Conners' Adult ADHD Diagnostic Interview for DSM-IV (CAADID) to validate the diagnosis, with results showing the ASRS as a sensitive screener for ADHD in adults with substance use disorders. While the CAADID is established as a reliable structured interview for identifying ADHD in the general population, its utility in the substance abusing population is less clear. The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) is designed for the systematic evaluation of psychopathology in those with substance use disorders, with probes to differentiate between substance effects and primary psychiatric disorders. To our knowledge, this study will be the first to evaluate the utility of the ASRS using the PRISM as the gold standard in identifying adults with ADHD and alcohol dependence. We examined a cohort of treatment seeking, adult, alcoholic men and women in a residential treatment center located in the Midwestern United States. We ascertained the agreement between the ASRS and the PRISM in 239 patients. The majority had comorbid psychiatric disorders and other substance use disorders. A kappa coefficient was obtained to assess the agreement between tests. Kappa was equal to 0.0142 (95%CL = 0.005, 0.0233). The overall agreement between the ASRS and the PRISM was 15.9%. The ASRS had a false positive rate of 89.7%, and a 0% false negative rate. In our alcohol dependent study population, the ASRS had a very high false positive rate, suggesting its limited utility in screening for ADHD in adults with alcohol dependence when using the PRISM as the gold standard.

**NO. 155**

**CHARACTERISTICS OF ANTIPSYCHOTIC USERS FROM 2003 TO 2010 IN THE UNITED STATES**

*Lead Author: Kathryn K. Ridout, M.D., Ph.D.*
*Co-Author(s): Samuel J. Ridout, M.D., Ph.D., Junjia Zhu, Ph.D.*

**SUMMARY:**
Introduction: Studies suggest antipsychotic use has increased over time. There are limited data on antipsychotic use over time in the general population. The Medical Expenditure Panel Survey (MEPS) provides a complete source of data on the cost and use of healthcare nationwide. This research project examined antipsychotic use and user characteristics across the United States (U.S.) from 2003-10 using the MEPS database.
Methods: Data from 2003-2010 were collected from MEPS (~35,000 individuals a year, medical providers, employers across the U.S.), which is released by the Agency for Healthcare Research and Quality. The data were extracted, prescription and personal level files linked by each patient's unique ID, and the data weighted using the MEPS algorithm. Analyses were done using SAS software version 9.3 (SAS Institute, Cary, NC, USA) and R programming language version 2.15.2 (R Foundation).
Results: Antipsychotic users increased from 3,190,856 in 2003 to 4,231,261 in 2010 (33% increase). The number of users peaked in 2009 (4,888,574), but was never greater than 2% of the U.S. population (1.0%-1.7%). The proportion of users on a first generation antipsychotic (FGA) steadily decreased (32% in 2003; 11% in 2010). Quetiapine and risperidone were the most used across all years. Aripiprazole use increased precipitously from 2006-09, accounting for 32% of second generation antipsychotic use in 2009, while quetiapine accounted for 38%. Users aged 19-64 accounted for 67%-73% of users from 2003-10. The most used antipsychotic varied by age and year, but on average, aripiprazole was most used for those 18 years or under, quetiapine for ages 19-64, and FGAs for those 65 years or older. The number of users 18 years or younger increased more per year (8.5%/year on average) than any other age group. The proportion of female users from 2003-2010 was slightly higher than male (56% compared to 44%). More males were prescribed quetiapine and olanzapine than females. Most users were white (75-85%), followed by African Americans (AA: 11-19%). In 2010, the most commonly used antipsychotic for AA was risperidone, and aripiprazole for whites. AA users made up a greater proportion of FGA users in 2010 than was noted for second generation antipsychotics. From 2003-10, a greater proportion of the northeast population used antipsychotics compared to other regions. The number of antipsychotic users increased most rapidly in the western U.S.
Conclusions: Antipsychotic use increased from 2003-2010. Antipsychotics are most commonly prescribed to whites, females, and the in the northeast. The antipsychotic of choice appears to change over time and vary based on user demographics. These data indicate antipsychotic use among those 18 or under is increasing more rapidly compared to other age groups. Further analyses are required to determine the conditions for which these are prescribed and potential recommendations for prescribing practices.

**NO. 156**
**ANTIPSYCHOTIC PRESCRIPTION PATTERNS IN THE UNITED STATES FROM 2003 TO 2010**
*Lead Author: Samuel J. Ridout, M.D., Ph.D.*
*Co-Author(s): Kathryn K. Ridout, M.D., Ph.D. Junjia Zhu, Ph.D.*

**SUMMARY:**
Antipsychotic prescribing habits have received increased attention after some reports suggested they may be over-prescribed in certain populations. The medical expenditure panel survey (MEPS) database is a set of large-scale surveys of families, individuals, medical providers, and employers across the United States providing a complete dataset on the cost and use of health care and health insurance coverage. The purpose of this study was to examine prescribing patterns of antipsychotics using the MEPS database from 2003-10 and the purpose of these prescriptions.
Methods: Data from 2003-10 were collected from the MEPS database (n=~35,000 per year). The data were extracted and assembled, the prescription file linked to the personal level file by each patient's unique ID. Prescription events are recorded by reporting pharmacies in the database and the data weighted using the MEPS algorithm. Each prescription was associated with up to three ICD-9 codes. These codes were grouped into two categories: psychiatric disorder or medical condition (defining psychiatric disorder as any condition found in the DSM-IV). Analyses were done using SAS software version 9.3 (SAS Institute, Cary, NC, USA) and R programming language version 2.15.2 (R Foundation).
Results: Between 2003-10, the most commonly prescribed antipsychotic to patients varied between risperidone, quetiapine, and aripiprazole. There was an overall trend of increasing antipsychotic prescriptions between 2003 and 2010 (p=0.003). The number of antipsychotic prescriptions increased between 2003-2009 by an average of 8.3%, but decreased between 2009-2010 by 8.5% (898,007). This decrease was mainly due to decreased prescriptions for aripiprazole and quetiapine, which decreased by 23% and 20% in 2010 compared to 2009, respectively. While the number of second generation antipsychotic prescriptions increased from 2003 to 2010 by 87%, first generation antipsychotic use decreased by 47% over this same time period.
Between 2003-10, the majority of antipsychotic prescriptions were for psychiatric illnesses (62-83% of all antipsychotic prescriptions). Until 2010, the majority of first generation antipsychotic prescriptions were written for medical conditions (51-60%). Quetiapine was the most common second generation antipsychotic prescribed for non-psychiatric indications, (~30% of prescriptions written for medical conditions 2003-10).
Conclusions: The total number of antipsychotic prescriptions for patients has increased from 2003-10, but exhibits variation year to year in the antipsychotic of choice and what the antipsychotics are prescribed for. These changes in prescribing patterns likely reflect changes in the FDA-approved uses and age limits, study results, and the preferences of the field. These data may also reflect the need for increased education of non-psychiatric providers or the need for further research on the benefits and harms of antipsychotic off-label use.

**NO. 157**
**VIOLENCE REDUCTION IN THE INPATIENT PSYCHIATRY UNIT: A PERFORMANCE IMPROVEMENT PROJECT**
*Lead Author: Muhammad Rizvi, M.D.*
*Co-Author(s): Muhammad Rizvi, M.D., Syed Bukhari, M.D., Stuart Aaronson, LCSW-R, Michelle Blackburn, R.N, Charles Nnadi, M.D., Zafar Sharif, M.D.*

**SUMMARY:**

Background: Assaults are dangerous and frighssaults are dangerous and frightening experience for patients, staff and visitors. They are a high risk to safety since they result in harm and often times serious injuries to patient and staff. Assaults lead to increased healthcare costs and dissatisfied patients and staff. According to a study from 2003, over a one week period, more than 20% of psychiatry nurses had been the victim of physical assault, while more than half had been verbally assaulted. In 2012, Harlem Hospital's assault rate was at 0.43 per 100 patient days compared to HHC benchmark of 0.32 assaults per 100 patient days. Since Harlem Hospital is committed to patient and staff safety a multidisciplinary team was formed to conduct a PI project to reduce incidence of violent/assaultive behavior.
Objective: To reduce assault rate in the inpatient Psychiatry unit, a 52 beds unit, below Health and Hospital Corporation benchmark of 0.32 assaults per 100 patient days by 4Q 2013.
Methodology/Explanation of the Interventions used in the project:
Setting: Harlem Hospital, affiliated with Columbia University Medical Center in the city of New York.
Utilize TeamSTEPPS to improve treatment team communications, planning, and resident supervision
; twice daily team huddles and hand-off protocol.
Revamped group and activity schedule – ongoing and revised as needed.
Revised Broset violence checklist policy to ensure timely assessment of potential for dangerous behavior. Built a quiet room on each unit.
Hired Behavioral Health Associates to support and lead efforts of de-escalation and patient redirection; and hired creative art therapists and Social workers.
Training of all staff in Crisis Prevention Intervention and cultural competency.
Installed a protective barrier at nursing station and visual barrier between the two units.
Moved staff offices off the unit to create space for therapeutic activities.
Training and implementation of Recovery Model Program to establish a shared mental model of potential for recovery in the mentally ill.
Introduced peer counseling and psychotherapy with creative arts therapists.
Early interventions and mitigation planning, including de-escalation.
Prompt use of oral prn medications or IM medications for early symptoms of aggression.
Institute Patient Rights Mental Health hearings including legal and familial representation for all cases to work collaboratively with patients prior to initiating court involvement.
Results:
The assault rate in the in-patient unit at Harlem Hospital in year 2011 was 0.44 per 100 patient days. The assault rate in 2012 was 0.43. The interventions to reduce assault rate as a performance Improvement project was put in place in January, 2013 and the assault rate during 1Q 13 was reduced to 0.29. The assault rate during 2Q 13 was 0.45. The assault rate during 3Q 13 was 0.19. The target assault rate by 4Q 13 is 0.32, which is also Health and Hospital Corporation's benchmark.

**NO. 158**
**PSYCHOGENIC NONEPILEPTIC SEIZURES AS A MASKING FOR EMOTIONAL CONFLICTS IN A MILITARY SETTING**
*Lead Author: Gabrielle Rolland*
*Co-Author(s): John Magera, M.D. and Harold Wain, Ph.D.*

**SUMMARY:**
INTRODUCTION: Psychogenic nonepileptic seizures (PNES) can be difficult to diagnose and distinguish from epileptiform activity. PNES are physical manifestations of psychological distress that may occur in individuals with comorbid psychiatric disorders and a history of abuse or trauma. In this case report the patient is a member of the military that was diagnosed with PNES after two evaluations of seizure-like episodes.
CASE DESCRIPTION: The patient is a 29 year old male with 7 months time in service in the U.S. Navy that presented with a history of 3 seizure-like episodes occurring over 4 months. The episodes consisted of loss of consciousness and tonic-clonic movements that lasted for 45 seconds, which were followed by a prolonged post-ictal state. Since the onset of the episodes the patient had become increasingly concerned about the disease that may be causing these symptoms. This worry led to a significant change in his mood from euthymic to depressive. He denied personal or family history of psychiatric disorders but endorsed characteristics suggestive of dissociative behavior. In particular he described a history of somnambulism and "zoning out." He recently finished basic training and advanced individual training to be a corpsman at a military hospital. He described an excellent relationship with his wife and was excited about the birth of their first child. He denied any history of abuse and stated that he had a great relationship with his family. During the evaluation of his episodes the patient was placed on Video EEG twice at two separate military hospitals. During the first evaluation, EEG changes were absent during his seizure-like episode. For unknown reasons no diagnosis was made, leading to a greater decline in his mood and Suicidal Ideation (SI). During his second hospitalization he was diagnosed with PNES. After evaluation by Psychiatric Consult Liaison Service he started outpatient psychodynamic therapy to deal with issues of guilt and shame. His mood has improved; episodes have ceased, and he no longer has SI.
DISCUSSION: In classic presentations of PNES, patients are often misdiagnosed with epilepsy or not given a clear diagnosis. Both can lead to adverse effects. Salinsky, Spencer, Boudreau and Ferguson (2011) showed a substantial delay in diagnosis of PNES in veterans as compared to civilians in their article "Psychogenic Nonepileptic Seizures in US Veterans." This raises concern about the lack of awareness, appropriate work-up, and timely diagnosis of PNES in the military population. Furthermore, it is possible that military culture conditions people to suppress emotions, leading to somatic representations.
CONCLUSION: The classic patient seen with PNES may not be the majority of people in the military but somatization can present in any individual under notable stress. The discrepancy in timely diagnosis of PNES in the military warrants further evaluation as misdiagnosis or lack of diagnosis can be detrimental.

**NO. 159**
**VIVID IMAGERY IN SCHIZOPHRENIA SPECTRUM DISORDERS: PHENOMENOLOGICAL CONCEPTS DESCRIBING ANOMALOUS IMAGINATION**
*Lead Author: Andreas Rosén-Rasmussen, M.D.*

*Co-Author(s): Julie Nordgaard, M.D., Ph.D., Josef Parnas, M.D., Professor, Dr. Med. Scient.*

**SUMMARY:**
Introduction:
Historically "predominance of inner fantasy life" was an important aspect of Bleuler's concept of schizophrenic autism. However, the psychopathological concepts addressing phenomena of imagination are few and not well defined.
The goal of our project is to clarify and enrich the psychopathological tools addressing imaginative experiences in schizophrenia spectrum disorders (SSD). We will try to clarify whether these phenomena exhibit a structure specific to SSD with the purpose of sharpening diagnostic boundaries, assist differential diagnosis, and facilitate early detection of psychosis.
Methods:
The first part of the project is descriptive and conceptual. Our goal is to construct a symptom checklist for a semi-structured interview targeting varieties of anomalous imagination. This phase consists of interaction between explorative, clinical interviews and theoretical considerations based on the existing literature and resources from contemporary philosophy of mind and phenomenology.
The second part of the project will be an empirical study which will examine the diagnostic specificity of the items in the symptom checklist. Two groups of patients with SSD and obsessive-compulsive disorder, independently diagnosed with a diagnostic interview (PSE), will be interviewed with the symptom checklist developed in the first phase.
Results:
We present qualitative data from the first, descriptive phase of the study. So far we have made explorative interviews with six first-admitted patients diagnosed with SSD.
These patients describe frequent "vivid images". Sometimes they are able to explore their mental images in detail for many minutes. The images acquire a temporal and structural stability, a sense of spatiality, and a form of autonomous flow to which the patient is a passive observer with a sense of inner distance to the experience.
This differs radically from phenomenological analyses of imagination in general (E. Husserl, JP. Sartre) that point out that a mental image is not "an object in the mind" that is observed, but more a relation, a medium through which a person intends the content of the imagination. Imaginations are vague, unstable, and lack temporal constancy. Even more importantly, a person normally doesn't experience mental images with a sense of distance to the images as "something other" that faces his consciousness.
In contrast, the patients describe an objectivation of mental images. This implies a disturbance of the first-person perspective where the phenomenological structure of the inner images is transformed from an intentional medium into an inner object.
Discussion and conclusion:
We think these preliminary data point to the importance of the domain of imagination in the psychopathology of SSD. Furthermore, they provide new, tentative concepts describing varieties of anomalous imagination suitable for the planned empirical study described above.

**NO. 160**
**DIAGNOSIS AND TREATMENT CHALLENGES IN A PATIENT WITH COMPLEX PARTIAL SEIZURE WITH PRE-EXISTING PSYCHOSIS**

*Lead Author: Kamalika Roy, M.D.*
*Co-Author(s): Varma Penumetcha, M.D., Richard Balon, M.D., Nash Boutros, M.D.*

**SUMMARY:**
Introduction: Close relationship between psychosis of epilepsy and primary psychosis has been studied earlier. The symptoms of seizure related psychosis are not only similar to those of schizophrenia but also can co-exist or present as worsening of pre-existing psychotic features. The purpose of this poster is to demonstrate the clinical and neuropsychiatric aspect of seizure disorder in a setting of pre-existing diagnosed case of primary psychosis and to understand the therapeutic challenges encountered in such a complicated clinical presentation.
Clinical case: A 56 year old African American male with a past diagnosis of schizophrenia, who was relatively stable for more than fifteen years presented with a chief complaint of "being in a daze". On several occasions he was found by the family members to be confused, mute, staring vacantly with bizarre behavior. The episodes lasted for few hours to few days. There was no bowel or bladder incontinence, jerky limb or trunk movement, tongue biting, or unconsciousness. The patient was admitted to inpatient psychiatry unit four times in last six months with similar clinical presentation. He was on risperidone 2 mg at home, with no recent change in dose. During his hospital stay he was seen to be staring vacantly, responding after repeated verbal command, with some lip smacking movements. He was not seen to be responding to internal stimuli. PANSS was administered on admission, on day 4, on the day of discharge and subsequently during outpatient follow up. He was resumed on risperidone and the dose was increased to 2 mg twice daily on day 4 without any change symptom change. Neurology was consulted for possible organic cause of change in mental status and EEG revealed sharp wave activity over left temporo-parietal at P3-01 electrodes with phase reversal at F7-T3 with intermittent diffuse slow wave activity throughout the recording. Subsequently patient was treated with a combination of topiramate and risperidone and the episodes of "in daze" settled down gradually. He was discharged on day 11 and followed up at outpatient psychiatry and neurology.
Discussion: According to review of literature psychosis can be temporally related to seizure activities (ictal, postictal or interictal) or it may have a chronic non-episodic course. Postictal and interictal psychoses have been shown to have continuous epileptiform discharges from the limbic area, a similar finding in primary psychosis in invasive EEG. The similarity in anatomic area of the pathology is further supported by FDG-PET findings of hyperactivity of mesial temporal lobe, amygdala and hippocampus in both schizophrenia and CPS. This complex clinical presentation calls for lower threshold from the psychiatrists to consider various seizure disorders contributing to psychosis.
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**NO. 161**
**LAMOTRIGINE IN PEDIATRIC MOOD DISORDER**

*Lead Author: Muskinni O. Salau, M.D.*
*Co-Author(s): Sultana Jahan M.D., Rasha El-Kady M.D.*

**SUMMARY:**

Lamotrigine in Pediatric Mood Disorders

Lamotrigine is FDA approved for seizures and bipolar mood disorder in adults(1). Numerous studies support its use in bipolar depression (2) in adults. There is less support for its use in pediatric mood disorders.

Here, we present 2 cases that illustrate its effectiveness in pediatric mood disorders.

BH was initially seen after a suicide attempt when she was 13yrs old. She was diagnosed with Anxiety Disorder NOS and Mood disorder NOS. After medical stabilization, she was started on fluoxetine and discharged. She was irritable and was started on aripiprazole. Over the next year, her mood remained unstable and irritable in spite of several medication. Finally, she was started on Lamotrigine and within a month, both the patient and her parents reported a stable mood, much less irritability and improvements in their relationships. The aripiprazole was discontinued and she also stopped therapy without any deleterious effect. She has been on the same dose for the last year and her improvement has been sustained.

CC is a 13yr old male initially seen in our clinic as an 11yr old. He had a diagnosis of ADHD, ODD and MDD. He presented with irritability and anger outbursts. He was started on a stimulant which helped with his hyperactivity and inattention but not irritability or anger. He was in the principal's office several times a week. He was started on aripiprazole which helped for 2 months but the irritability and anger problems returned and visits to the principal's office ensued. A trial of Divalproex was unsuccessful. He was started on lamotrigine and within a month the family reported improvements in his mood and reduction in the frequency of anger outbursts and visits to the principal's office. He has tolerated the medication well with no significant side effects.

Discussion

Lamotrigine has an FDA approval for seizures and treatment of bipolar disorder in adults. In children the approval is only for seizures in 2years and above (1). There are very few studies of its use in pediatric mood disorders. This case series shows that lamotrigine can be effective in stabilizing the mood and reducing aggression.The children we studied (4) had several diagnoses ranging from mood disorders, PTSD, to disruptive mood disorders and MR.

Conclusions

Lamotrigine has no FDA approval in pediatric mood disorders but in select patients it is effective. Children that did well in our case studies appeared to be those with a lot of irritability, mood swings and frequent anger outbursts. Lamotrigine has side effects including a life threatening rash and thus thorough psychoeducation is indicated.

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**NO. 163**

**CYTOKINES DEFICIENCY AS A PREDISPOSING FACTOR FOR ANXIETY DISORDERS**

*Lead Author: Susana Sanchez, M.D.*

*Co-Author(s): Nicole Guanci, M.D., Sabina Mushtaq, M.D.*

**SUMMARY:**

Cytokines are a diverse group of proteins that function as signaling molecules to a wide variety of cells within a target organ and subsequent signals from the target organ to blood cells, immune cells and cells of other organs. These proteins play a role in immune regulation, neurogenesis, and monoamine activity. A number of studies have shown that anxiety disorders are associated with a less robust immune response. In fact, immunological disturbances in patients with panic disorder were investigated by measuring the circulating levels of cytokines. In these studies, the mean values of interleukin (IL)-12 and interferon-gamma (IFN-γ) were found to be significantly lower in the panic disorder group when compared to the controls. Also, IFN-γ values were significant predictors of the presence of panic disorder.

Here, we present a case of a 15 year-old male with a medical history significant for IL-12 deficiency and decreased production of IFN-γ, evaluated by the psychiatry consult-liaison team during a medical admission for sepsis, who was found to have panic disorder and obsessive-compulsive disorder. This case highlights the relationship between panic disorder and IFN-γ and IL-12 deficiency, and supports the hypothesis that cytokines may potentially play a role in the regulation of immunological and monoaminergic effects of chronic stressors, emotions, and the development of anxiety-like behaviors.

**NO. 164**

**TOXIC VASCULITIS, SEIZURES, AND PSYCHOSIS AFTER USING SPICE: A CASE REPORT**

*Lead Author: Yuliet Sanchez, M.D.*

*Co-Author(s): Sarah M. Fayad, M.D., Almari Ginory, DO*

**SUMMARY:**

Introduction

Synthetic cannabinoids ("K2" and "Spice") are potent analogs of naturally occurring chemicals found in marijuana including tetrahydrocannabinol (THC), cannabidiol (CBD) and cannabinol (CBN). They represent a relatively new class of designer drugs that have recently emerged as popular alternatives to marijuana. Some adverse clinical effects reported include, myocardial infarction, acute kidney injury, anxiety, aggressive behavior, psychosis, short-term memory deficits and seizures. We present the case of a patient with seizures, CNS lesions, and vasculopathy induced by "Spice".

Case Report

A 25 y.o Caucasian male with no significant past medical history presented to the Emergency Room (ER) complaining of acute onset occipital headache associated with photophobia, nausea, and vomiting. He reported smoking "spice" for the last 2 years and denied other illicit drugs use. Physical exam was unremarkable. In the ER, he had a seizure event requiring intubation. He was subsequently admitted to the hospital for further workup. He had another witnessed event consistent with a generalized tonic-clonic seizure and developed psychotic symptoms. Electroencephalogram (EEG) demonstrated left temporal spikes. Magnetic Resonance Imaging (MRI) showed multiple grey and

white matter lesions concerning for toxic vasculopathy. Lumbar puncture (LP) showed normal protein, RBC and WBC count; however opening pressure was elevated. A repeat MRI showed progression of some lesions and resolution of others. Computed tomography Angiogram (CTA) was consistent with vasculitis and cerebral venous thrombosis. A computed tomography (CT) examination of the chest showed a pulmonary embolism. Laboratory workup including HIV, Hepatitis, Lupus panel, and Paraneoplastic panel were negative. Cerebrospinal fluid (CSF) cytology, Toxoplasmosis, Lyme, Herpes Simplex Virus, Cytomegalovirus, and Ebstein Barr Virus were negative. CSF Veneral Disease Research Laboratory (VDRL) test was non reactive.
The physical exam and CSF findings made a CNS infection and other diagnosis unlikely. Patient was extremely combative and exhibited visual hallucinations and paranoia. He was started on Phenytoin, Clonazepam, and Olanzapine with resolution of agitation, seizures and psychosis.
Discussion
It is postulated that synthetic cannabinoids induce seizures due to a strong stimulation of the receptor CB1. Research studies in animal models indicate that the CB1 receptor mediates cytotoxicity of spice towards neuronal cells. A caspase-3-dependent mechanism seems to play an important role in the apoptosis induced by spice causing neuronal damage. The biological effects of synthetic cannabinoids are not fully understood, however their abuse is a potential health hazard for humans as they can cause multiple adverse neurologic complications including toxic vasculitis, seizures, and psychosis. More investigation is needed.

**NO. 165**
**DELIRIUM AFTER USE OF COMPOUNDED TRANSDERMAL MEDICATION**
*Lead Author: Caroline C. Scacca, M.D.*
*Co-Author(s): Alyssa A. Soumoff, M.D., David L. Cook, B.A.*

**SUMMARY:**
Transdermal medication administration is becoming increasingly common. It offers prolonged and more consistent serum medication levels, avoids first-pass hepatic metabolism, and potentially obviates unpleasant injections or rectal administration. Many analgesic and psychotropic medications are available transdermally as they are highly lipophilic molecules with low molecular weight and can efficiently penetrate the skin. The same properties also allow these medications to easily enter the central nervous system. Diffusion through the stratum corneum is the rate limiting step in transdermal administration. Medications applied to areas where the stratum corneum is thinnest, such as the face and genitalia, are more rapidly absorbed. While transdermal patches offer consistent dosing of medication over an extended period of time, transdermal gels carry a higher risk of poor compliance and overdose. The literature is relatively sparse regarding the systemic effects of topical medications with multiple psychotropic ingredients; here two cases are explored where delirium was likely secondary to the use of compounded transdermal medication.
The first case involves a 74 year old female with a history of dementia and pelvic neuritis with chronic vaginal itching who presented for delirium. She had recently been prescribed a topical cream to treat her pelvic neuritis that contained ketamine-ketoprofen-gabapentin-lidocaine-clonidine 10-10-6-3-0.6%. As she continued to use the cream her behavior became more erratic and agitated. At one point she applied the cream extensively around her vaginal area and her complete upper body; soon after she became markedly agitated and demanded to leave the house. Her behavior deteriorated to the point where immediate concern for her safety became an urgent matter. Her admission labs showed elevated serum ketamine and norketamine levels with no other abnormalities. The cream was discontinued; after two days her delirium had resolved and her cognitive status returned to baseline.
The second case involves a 75-year old male with a history of hypertension and chronic back pain with left lower extremity radiation. Four weeks prior to presentation, the patient had been prescribed a topical cream for pain after back surgery that contained ketamine-clonidine-gabapentin-imipramine-mefenamic acid-lidocaine 10-0.2-6-3-1-2%. Even after five days of using the cream collateral noted his hands became tremulous, angry, and paranoid. On admission the patient displayed significantly altered mental status, emotional-expressional disassociation, mild right-sided paratonia and hyper-reflexia. His behavior fluctuated from cooperative to combative. An extensive workup for encephalopathy did not reveal any specific etiologies. The cream was discontinued and the patient's mental status and behavior resolved with lorazepam.

**NO. 166**
**CLOZAPINE-INDUCED SMALL BOWEL OBSTRUCTION**
*Lead Author: Meghan Schott, D.O.*

**SUMMARY:**
Clozapine has been known to have many side effects. Although most doctors know that clozapine can cause agranulocytosis with neutropenia and seizures, it can also induce another side effect. Clozapine can impair motility throughout the gastrointestinal tract. This medication side effect has been estimated to be life threating in about 3 cases per 1000 patients exposed to clozapine. This suggests that this is a side effect that more psychiatrists should become more vigilant of through prevention and recognition.
Clozapine induced gastrointestinal hypomotility or CIGH can affect the entire gastrointestinal tract, from esophagus to rectum and may cause small bowel obstruction, ischemia, perforation, and aspiration. This case report will focus on an adult male who was started on clozapine and then subsequently developed a small bowel obstruction.

**NO. 167**
**HAVE THE LAWS RESTRICTING USE OF ECT GONE TOO FAR? A CASE OF CATATONIA REFRACTORY TO BENZODIAZEPINES AND A DELAY IN ECT DUE TO LEGAL HURDLES**
*Lead Author: Alexis A. Seegan, M.D.*
*Co-Author(s): Michael Frazier, M.D., Michele Nelson, M.D., Tina Allee, M.D., Jody Rawles, M.D.*

**SUMMARY:**
A 58 y/o F with previously diagnosed schizoaffective disorder with catatonic features, seizure disorder, intellectual disability, and prior episode of neuroleptic malignant syndrome who presented with 2 days of rigidity, confusion, selective mutism, and was found to be febrile, tachycardic, and hypertensive in the ED. Psychiatry was consulted to evaluate for catatonia. On

initial exam patient would not open eyes, would resist attempts to open her eyes, and would not withdraw to pain. She was started on a lorazepam for suspected catatonia, and after starting the drip she became more responsive but remained immobile. The patient's constellation of symptoms was consistent with severe catatonia and as she had an initial positive response to lorazepam, she was treated with high-dose benzodiazepines up to 96 mg total of lorazepam daily with minimal improvement in symptoms. Additionally she was trialed on bromocriptine and zolpidem. Due to concern for worsening her catatonia, trials of antipsychotics were initially deferred, however after minimal improvement on the high-dose benzodiazepines, an antipsychotic was started. These medications had no discernable effect and she remained mute and stuporous. ECT was indicated throughout the course of the hospitalization and most sources recommend it as the treatment of choice for malignant catatonia. The delay in obtaining ECT as a treatment for the patient stemmed from the multiple legal hurdles that exist in California for performing ECT on a person that is unable to provide consent. The patient's intellectual disability added an additional layer of regulations. The patient's sister was her designated surrogate medical decision maker and was agreeable to have her undergo ECT. Due to the emergent and life threatening nature of the patient's condition, the risk management department of the hospital commissioned an outside legal team to facilitate obtaining ECT. The patient was able to receive her first ECT treatment 6 weeks after her admission to the hospital. She responded well to the treatment, and after the first treatment she began to speak for the first time since admission. She is still receiving ECT and continues to improve as of this writing.

Laws governing ECT administration in California are very strict, and there is significant confusion about who can consent to ECT for a patient in an emergent situation and for patients with developmental delay. In this case, the patient already had a surrogate decision maker identified, but a lengthy external legal investigation was still necessary to determine the legality of administering ECT even in an emergent situation. While in this case the patient ultimately received the necessary treatment, there was an unfortunate delay in providing this treatment due to stringent state laws governing the use of ECT. This case demonstrates the need for clear policies in regards to obtaining ECT for patients with surrogate decision makers, particularly in California.

**NO. 168**

**CHALLENGES OF WORKING WITH PARENTS AS A CHILD PSYCHIATRIST**

*Lead Author: Shaneel Shah, M.D.*

**SUMMARY:**

"The thing I don't like about working with kids is that you have to deal with parents." "This mother wants me to fix the problem in two sessions and her impatience is frustrating." Such statements and feelings behind them-usually resentment, frustration, anger, feeling incompetent-haunt us and at some level make our work less enjoyable. Common issues we face in dealing with parents include: 1) Parents who want a "quick fix" for their children and demand rapid solutions; 2) Tendency to localize family problems to the child who then becomes a recognized "patient"; 3) Hoping to get miraculous solutions with the least effort from family-medications can then be seen as the "rescuing" agents. These problems are described with the help of clinical vignettes along with an exploration of the potential origins of these problems from a psychodynamic perspective.

**NO. 169**

**TECHNOLOGY-BASED COGNITIVE BEHAVIORAL THERAPY FOR THE TREATMENT OF DEPRESSION IN ADOLESCENTS AND YOUNG ADULTS: A SYSTEMATIC REVIEW**

*Lead Author: Katherine M. Shea, M.D.*
*Co-Author(s): Cara V. Baskin, B.S., Conor A. Richardson, B.A., Ajithraj Sathiyaraj, B.A., Robin J. Larson, M.D., M.P.H.*

**SUMMARY:**

Background: There is growing interest in using technology-based cognitive behavioral therapy (CBT) to treat adolescent depression, but efficacy and safety must be understood before widespread implementation.

Objective: To assess the efficacy and safety of technology-based CBT (techCBT) for the treatment of depression in adolescents and young adults.

Search Methods: We searched CENTRAL, MEDLINE, PsycINFO, and the Current Controlled Trial registry from inception through October 2013 using no limits. We reviewed references of relevant articles.

Selection Criteria: Randomized controlled trials comparing 1) techCBT versus waitlist, 2) techCBT versus treatment as usual (TAU), or 3) techCBT plus TAU versus TAU, in adolescents or young adults with depression.

Data Collection and Analysis: Two reviewers independently assessed methodological quality and extracted data. Within each comparison, we used random effects to calculate pooled standardized mean differences (SMD) and relative risks (RR). Change in depressive symptom scores were measured at the end of the intervention (2-8 weeks) and at subsequent follow-up (8-20 weeks).

Main Results: Of 572 records screened, seven trials were included. Three trials comparing techCBT to waitlist (n=97) demonstrated greater reductions in depressive symptoms at post-intervention in the techCBT group, however the pooled finding of usable data was not statistically different (SMD -0.80, 95%CI -2.00, 0.39, 2 trials), and there was no difference between study arms in the trial that reported change at follow-up (SMD 0.03, 95%CI -0.74, 0.80). Based on one trial, subjects in the techCBT group had higher rates of remission (75% versus 42.7%, RR 1.80, 95%CI 0.88, 3.68) and response (85% versus 42.7%, RR 2.04, 95%CI 1.02, 4.08), compared to waitlist. One trial compared techCBT to TAU (n=187). Results were similar between study arms for all outcomes: depressive symptoms at post-intervention (SMD -0.14, 95%CI -0.44, 0.16) and follow-up (SMD -0.10, 95%CI -0.40, 0.21); rates of remission (44.7% versus 35.5%, RR 1.26, 95%CI 0.88, 1.80) and response (59.6% versus 54.8%, RR 1.09, 95%CI 0.85, 1.39). While three trials comparing techCBT plus TAU versus TAU alone (n=518) found no difference in depressive symptoms at post-intervention (SMD -0.05, 95%CI -0.34, 0.23, 2 trials) or follow-up (SMD -0.31, 95%CI -0.73, 0.11, 3 trials), techCBT plus TAU led to significantly greater rates of remission (56.2% versus 19.5%, RR 2.88, 95%CI 1.95, 4.26, 1 trial). The two studies that reported safety data found no differences between study arms.

Authors' Conclusions: TechCBT may offer an effective alternative or adjunct for the treatment of depression in adolescents and young adults, however current evidence is limited by the small number of published studies, small sample sizes, and wide variation in technology and co-interventions.

**NO. 170**

**PAIN KILLERS THAT CAUSE PAIN: A CASE SERIES ON OPIOID-INDUCED HYPERALGESIA AND IT'S REVERSAL WITH NALTREXONE**

*Lead Author: Swati Shivale, M.B.B.S.*
*Co-Author(s): Benjamin Milczarski, MD; Brian Johnson, MD*

**SUMMARY:**

Patients are often prescribed opioids for chronic pain. Several reviews have found elevated rates of psychiatric disorders in subjects reporting non-medical use of prescription opioids. A curious and paradoxical phenomenon, reliably demonstrated in animal models, consists of an increased sensitivity to pain that is induced by the very opioid drugs used to mitigate pain. This phenomenon is termed "opioid-induced hyperalgesia." Whether opioid-induced hyperalgesia occurs in humans, has been questioned by some reviews and reliably demonstrated by studies. Our Pain Service treats patients with long term opioid dependence who continue to have pain. Cold pressor time, a measure of pain sensitivity, was followed by detoxification, treatment of co-morbid psychiatric disorders, and low dose naltrexone administration. This is a case series demonstrating successful reversal of opioid induced hyperalgesia within 2 months, as evidenced by lowered pain complaints and improved cold pressor times. Treatment of comorbid psychiatric disorders facilitated subject retention.

**NO. 171**

**CREATIVITY IN THE MIDST OF CHAOS**

*Lead Author: Barinder Singh, M.D.*
*Co-Author(s): Felicia Iftene, M.D., Ph.D.*

**SUMMARY:**

Background:
Asperger syndrome is a developmental disorder that affects a person's ability to socialize and communicate effectively with others. One of the diagnostic criteria for Asperger's Syndrome is "unusually intense preoccupation with one or more stereotyped interests." The patient in question has an absolute fascination with certain repetitive details of surrounding areas, a photographic memory and an extraordinary drawing talent. This presentation discusses the beauty that emerges in the patient's artwork despite the chaos of a severe mental illness.
Methods:
Retrospective study of patient's chart was done. Patient was interviewed and collateral was also obtained. Examples of his art work are also photographed
Results:
A thirty three year old male is diagnosed with Asperger syndrome in his childhood. He has many admissions to psychiatric hospital with different presentations and consecutive diagnoses of obsessive compulsive disorder, depression, schizoaffective disorder. Despite the burden of his psychiatric illness, patient continues to pursue his love for art. He is able to produce beautiful and precise artwork despite his inability to function independently in society.
Conclusion:
There is a dispute in the psychiatric literature related to the possible concomitance of autistic spectrum disorders and schizophrenia. We try to systematize the main orientations. Aside from the challenging diagnosis, in his specific case we found his art work interesting. We chose 2 different expressions, one perfect, rigid, repetitive, and photographic. The other one is a change of his style, more flexible, colored, realized after some change in his medication, with decrease of anxiety and OCD traits.
Key Words: Schizoaffective disorder, Asperger syndrome, exceptional skills, Medication.

**NO. 172**

**THE KICKS AND JERKS CAUSED BY K2 CANNABIS-INDUCED SEIZURES**

*Lead Author: Garima Singh, M.D.*
*Co-Author(s): Anbalagan Emaya, M.D., Ithman Muaid M.D.*

**SUMMARY:**

Background: Marijuana and synthetic cannabis like K2 are becoming one of the most commonly used illicit drugs. This significant increase in the usage of synthetic cannabinoids has resulted in increased emergency department visits for varying adverse effects. Synthetic cannabinoids have effects similar or more potent than the parent marijuana . The main active ingredient in K2 binds to the CB1 (Cannabinoid type 1) receptor with approximately four times the strength of the naturally occurring compound. A wide variety of adverse effects have been reported from synthetic cannabinoids use including euphoria, anxiety, depression, agitation, psychosis, paranoia, tremors, conjunctival injection etc. There have also been 2 case reports of seizures with K2 ingestion.

We report a case of a 23-year-old male who developed seizures, psychosis and agitation after the consumption of K2 for the first time, even though he had a long history of marijuana abuse.
Case: Mr. M, a 23-year-old male with no previous psychiatric history was admitted after having a witnessed seizure. This was his first seizure. His mother reported that the patient used K2 and started "acting bizarre" and was responding to internal stimuli. This was followed by tonic-clonic seizure activity. He had a history of marijuana use for 10 years but had smoked K2 for the first time that day. During the hospitalization he was placed on seizure precautions, no psychotropic medications were used, as patient did not exhibit any mood or psychotic symptoms after admission. He had lab work including blood count, metabolic panel which were unremarkable and urine drug screen positive for cannabinoids, patient refused further evaluation for his reported seizure activity, and was discharged after three days of observation, where he did not display any major behavioral problem or seizure activity and was advised to follow up on an outpatient basis.
Discussion: Synthetic cannabinoid induced toxicity is increasing in frequency across the US with more than 1057 reported cases as of August 2010. Even though they were banned in 2011, they continue to gain popularity as a result of being more potent than natural cannabinoids, not being detected in current standard drug screens and due to being easily modifiable

by manufacturers to bypass legal restrictions. Unfortunately, together with increased consumption and marketing, there are also reports of increased serious adverse effects. The risk factors, pharmacokinetic and pharmacodynamic of K2 are unknown. Further research, investigation and education about the potentially fatal consequences are needed for the prevention of serious adverse effects like seizures.

References:

-J Addict Med _ Volume 6, Number 3, September 2012. Internet Highs-Seizures After Consumption of Synthetic
-The American Journal of the Medical Sciences _ Volume 344, Number 1, July 2012
-The annals of pharmacotherapy 2011 march, vol 45

**NO. 173**

**PRESCRIPTION TRENDS IN MIRTAZAPINE AS ADD-ON THERAPY FOR NEGATIVE SYMPTOMS IN SCHIZOPHRENIA**

*Lead Author: Gaurav Singh, B.S.*
*Co-Author(s): Klara Sputova, BA, Eric Hecht, MD, MSPH*

**SUMMARY:**

Background
75% of patients with schizophrenia do not achieve pharmacological remission despite the use of second-generation antipsychotic medications. This has driven the attempt to improve clinical outcomes with add-on medications. To date, no add-on agent has been approved by the FDA for such an indication. A recent meta-analysis supports the use of anti-depressant medications as add-on therapy to D2 antagonists in schizophrenia by improving negative symptoms. Mirtazapine, a noradrenergic and specific serotonergic antidepressant (NaSSA) used primarily in the treatment of depression, has been shown in numerous small trials over the last 10 years to be an effective add-on therapy agent in schizophrenia predominately through the improvement in negative symptoms. The purpose of this report is to determine whether practicing physicians are increasing their use of mirtazapine as add-on therapy in schizophrenia.
Methods
Clinical diagnosis values for US mirtazapine prescriptions were obtained from a random sample of 1,380 physician reports per month; sampling methodology employed a two-stage stratified cluster, randomly drawn. Two workdays per month were subsampled from each physician, and 8,280 physician-workdays were collected each quarter. Total mirtazapine sales data were based on a total of 5,770 hospitals and 472 wholesalers to retail pharmacies. Prescription data were categorized by indication (clinical diagnosis) including Major Depressive Disorder and Schizophrenia. Data were collected by the IMS Institute for Health Informatics.
Results
Mirtazapine prescriptions in the United States increased in both the hospital and retail settings from 2002 to 2012. Hospital prescriptions increased by 106% and retail prescriptions increased by 39% over the ten year period. Schizophrenia-specific mirtazapine prescriptions increased 18% over the same time period.
Discussion
Mirtazapine became a generic medication in 2004, and its utilization has increased substantially since that time primarily for the treatment of depression. Only minor increases in its utilization can be attributed to its use in schizophrenia. Despite having shown substantial efficacy in numerous small randomized clinical trials over the last 10 years, mirtazapine for the treatment of schizophrenia as an add-on therapy has not increased in utilization. Efforts to increase physician and patient awareness of mirtazapine's efficacy in schizophrenia as add-on therapy, particularly in negative symptoms, should be mobilized.

**NO. 174**

**COMORBIDITY OF BIPOLAR DISORDER AND MIGRAINE: A SYSTEMATIC REVIEW OF THE PREVALENCE RATES, CLINICAL FEATURES, PROPOSED MECHANISMS, AND TREATMENT**

*Lead Author: Joshna Singh, M.B.B.S.*
*Co-Author(s): Raphael.J.Leo M.A,M.D.*

**SUMMARY:**

Purpose: A search of literature was conducted to evaluate the comorbidity of bipolar disorder and migraine.
Methods: The search yielded 27 published reports. 10 involved assessments of bipolar disorder among migraineurs, Additionally, 17 studies assessed rates of migraine among patients with bipolar disorder.14 studies werein clinic setting and 13 in community setting.
Results: The comorbidity rates of bipolar disorder and migraine has been found to range from 4.9 to 77%. Together, these studies suggest that rates of bipolar disorder and its variants are higher among migraineurs than in general population. The prevalence rates of co-morbidity of these disorders was found to be higher in female as compared to males . It was also found that migraineurs had earlier onset on bipolar disorder as compared to general population.
Conclusions:There is a high rate of comorbidity between BD and its variants with migraine. Longitudinal, prospective studies are required to further clarify the relationship between bipolar disorder and migraine.

**NO. 175**

**EPISODIC MUTISM IN NON-CATATONIC SCHIZOPHRENIA: SYMPTOM AND ADAPTIVE BEHAVIORAL STRATEGY**

*Lead Author: Kyle P. Smith*
*Co-Author(s): Julie B. Penzner, M.D.*

**SUMMARY:**

Background: Mutism has a wide differential in psychiatry, but few case reports exist to demonstrate its diversity. Defined as an absence or reduction of speech, either voluntary or avolitional, adult mutism is usually associated with catatonia, particularly in schizophrenia, but also depression, bipolar disorder, intoxication, and neurological conditions. Although clinicians recognize that mutism occurs in non-catatonic schizophrenia, literature from the United States and Europe over the last 30 years scarcely mentions the topic, and no known case reports describe it. Here we present an unusual case of episodic mutism in a patient with non-catatonic schizophrenia, in which it appears both as a symptom and a coping strategy.
Case: The patient, a 38-year old woman with a graduate degree and steady employment in the corporate sector, was brought to the emergency department mute and unresponsive by her husband after he woke at dawn to find her fleeing their home in her nightclothes before she collapsed to the ground without uttering a word. She carried a diagnosis of schizoaffective

disorder and had been treated with numerous anti-psychotics, mood stabilizers, benzodiazepines, and SSRIs. Her first psychiatric hospitalization, six years prior, was notable for panic attack, delusions, and ideas of reference, including several years of persecutory fantasies centering on the notion that her colleagues were recording her with hidden audio devices in a conspiracy to demean and sabotage her. Two years after the first admission, she was hospitalized again for crying hysterically at a business meeting before becoming entirely mute. She described the incident as her first foray into total mutism, although she had been limiting her speech for some time in order to avoid being recorded. As time progressed, the patient adapted her mutism for use in a variety of non-paranoid contexts. She described going mute before an anxiety-provoking event in order to avoid explaining her fears to her husband; hospital staff observed her becoming mute as a foil to her overbearing father. Also on the unit, she refused to speak one morning when queried about logistics for a family meeting, and she sometimes went mute when she felt rebuffed socially. These episodes occurred absent paranoia, and the patient described them in non-psychotic terms as deliberate efforts to avoid conversation.
Discussion: Notably, in the last several years, a handful of case reports describing mutism in non-catatonic schizophrenia have come from India. When compared to the paucity of such reports in the West, some have suggested that mutism is on the decline in developed nations. Here we show that mutism exists in the West, not only in non-catatonic schizophrenia, but also as a literal response to the paranoid conviction that one is being recorded. In another twist, our patient adapted her symptomatic mutism as an adaptive behavioral strategy in contexts separate from her paranoia.

**NO. 176**

**RESTLESSNESS AND FEAR: A CASE REPORT OF A MAN WHO EXPERIENCED AKATHESIA AND ANXIETY AFTER STARTING GABAPENTIN FOR THE TREATMENT OF NEUROMUSCULAR PAIN**

*Lead Author: Michael E. Stachniak, D.O.*
*Co-Author(s): Charles W. Hoge, M.D., Ryan M. Vest, M.D.*

**SUMMARY:**

Introduction: Gabapentin is commonly prescribed in the U.S. and is used in the treatment of seizures, postherpetic neuralgia, neuropathic/chronic pain, and as an adjunct treatment for bipolar disorder, restless leg syndrome, and anxiety. It is being used with increasing frequency for these last three indications. Gabapentin is a leucine analogue and binds to the alpha-2 delta subunit of voltage-gated calcium channels. Its' similarity to gammaaminobutyric acid as well as mechanism of action of closing presynaptic calcium channels thereby decreasing excessive neuronal stimulation and neurotransmitter release, would seem to indicate it's efficacy as an anxiolytic agent. However, there have been reports that indicate gabapentin may be serving as a contributing or even causative agent to akathesia and anxiety. This case report will examine one such individual who experienced severe akathesia and anxiety shortly after the initiation of gabapentin.
Case: The pt is a 31 y/o male active duty soldier with no past psychiatric history and PMH relevant only for chronic back and hip pain following injuries sustained during deployment. His PCP started him on gabapentin 900mg daily to help address his chronic neuropathic pain. As instructed by his PCP, two days after starting the gabapentin he increased his dose to 1500mg daily and concurrently noticed a continued worsening of both the restlessness and anxiety. Two days later, he presented to the ER complaining of this new onset akathesia and anxiety. On examination in the ER, his physical exam was unremarkable other than overt restlessness. All bloodwork and UDS returned negative. The patient had not recently started or stopped any additional meds, nor was he using illicits or OTCs. He was unable to identify any current life stressors. As instructed by the ER provider, the pt decreased the dose back to 900mg daily and concurrently experienced a rapid improvement in both the anxiety and restlessness. Within 24 hours of the final dose, he experienced a complete cessation of all anxiety and restlessness.
Discussion: Given the rapid onset of these symptoms in the absence of other life stressors or medical etiologies as well as the rapid alleviation of these symptoms immediately after the medication was stopped, it became increasingly evident that this patient was experiencing anxiety and akathesia secondary to the gabapentin that he had been prescribed. While gabapentin is effective for most of patients to whom it is prescribed, it remains important for clinicians to recognize the unlikely but severe side effects that can develop in a small subset of patients.
Conclusion: An index of suspicion should be rendered to any case in which patients taking gabapentin report new onset restlessness and anxiety. These cases should continue to be reported to the FDA and APA in an effort to increase awareness to these rare, but debilitating side effects that some patients may experience.

**NO. 177**

**MANIA ON STEROIDS: A CASE OF FACTITIOUS DISORDER OR STEROID DEPENDENCY?**

*Lead Author: Charles Stanfa, D.O.*
*Co-Author(s): Wei Du, M.D., Donald Kushon, M.D., Alexander Paridon, MS III, Mitali Patnaik, M.D.*

**SUMMARY:**

Background: Consciously simulated illnesses fall into two diagnostic categories: factitious disorders and malingering differentiated by both motivation for behavior and consciousness of that motivation. Factitious disorder behaviors are motivated by an unconscious need to assume the sick role, while malingering behaviors are driven consciously to achieve external secondary gains. Factitious disorders may account for as many as 5% of all physician visits. Corticosteroids may induce dependence based on their propensity to induce euphoria as well as a characteristic withdrawal syndrome, in addition to directly influencing reward circuitry. Clinicians should be aware of the possibility of prednisone dependence when confronted with patients who exhibit vigorous insistence on corticosteroids out of proportion to objective signs and symptoms of inflammation. A number of more recent publications support the conclusion that symptoms of hypomania or mania are the most common psychiatric adverse effect of corticosteroid treatment. Case: We present a case of a 47 year old African American female with a self reported diagnosis of bipolar disorder admitted to the inpatient psychiatric unit after consuming food she was known to be allergic to and receiving prednisone which led to her developing

symptoms of mania. The patient, CW, had a history of Crohn's disease and was treated in the past with prednisone. She no longer was prescribed prednisone due to avascular necrosis of the right knee. She presented to the emergency room with new onset of neurological symptoms. In the ED, a stroke work-up, was performed and was subsequently found to be negative. Throughout her hospital stay the patient consumed food which she knew would cause an allergic reaction. She even went out of her way to go to the vending machines to satisfy her craving for these foods. She received prednisone, diphenhydramine and epinephrine for the sensation that her throat was closing. She enjoyed the feeling after receiving the steroids and in the past she would "manic". After receiving multiple doses of steroids she began to experience racing thoughts, increased production and speed of speech as well as paranoia that staff was against her. She also expressed thoughts of wanting to hurt herself. She was admitted to the psychiatric unit and continued to consume food which she had a known allergy to in order to receive further steroids. She described a craving for the foods which would lead to her allergies, and believed this to be an "addiction". Once on the psychiatric unit she was stabilized on risperidone and divalproex sodium with a good response. Discussion: This is an interesting case which this patient intentionally induced symptoms, whether consciously or unconsciously to either assume the sick role or for some other secondary gain. It is also interesting that she craved the euphoria from receiving steroids and if this is a form of drug seeking behavior.

**NO. 178**

**MOTOR SIDE EFFECTS IN THE COURSE OF CLOZAPINE TREATMENT: CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Monica Strom, M.D., M.P.H.*
*Co-Author(s): Kasia Gustaw Rothenberg, M.D., Ph.D., Luis Ramirez, M.D.*

**SUMMARY:**
Objective: Although the benefits of antipsychotic pharmacotherapy can be pronounced, many patients develop unwanted adverse effects including a variety of movement disorders. Compared with the traditional antipsychotics, the atypical antipsychotics have a decreased risk for associated movement disorders. Drug-induced movement disorders can occur, however, and the risk of adverse events can increase significantly when medications are misused. Clozapine has been described as the "gold standard" therapy for treatment-resistant schizophrenia, causing fewer extrapyramidal adverse effects than first generation antipsychotics. However, clozapine may cause epileptiform EEG changes and causes seizures in 3-5% of patients treated with this drug in therapeutic doses. Clozapine (as well as other antipsychotics) also induces abnormal motor symptoms different from classic antipsychotic-induced EPS. Myoclonus would be example of such a symptom and should be considered a manifestation of neurotoxicity.
Case Report and Clinical Outcomes: Review of literature was inspired by the case of a 36 year-old black male with a history of schizoaffective disorder who was admitted to an inpatient psychiatric unit for exacerbation of psychotic and depressive symptoms. Clozapine was initiated due to treatment-resistant schizoaffective disorder and history of extrapyramidal symptoms. The patient developed myoclonus of the face and vocal folds in the setting of clozapine titration and smoking cessation. After discontinuation of the medication, symptoms resolved over 1-2 days.
Literature Review and Discussion: Review of the literature showed several case reports of clozapine-induced myoclonus. One case report describes myoclonus preceding frank seizure activity. Development of clozapine neurotoxicity symptoms has also been suggested as an indicator of infection or inflammatory processes. Several case reports describe neurotoxic adverse effects in the course of a combined clozapine-lithium treatment. Additionally, abrupt cessation of smoking may result in higher and potentially toxic clozapine levels leading to neurotoxicity.
Conclusion/Recommendations: Myoclonic jerks may be observed in the course of clozapine treatment and may be a symptom of pharmacological interactions or changes in drug metabolism resulting in increased neurotoxicity. In such cases, there are no clear guidelines as to whether medication should be continued if effective, although likely medication dose should be lowered or stopped altogether in the setting of toxicity. Factors such as recent smoking cessation, concurrent treatment with lithium, and possible occult infection should be examined.

**NO. 179**

**MIRTAZAPINE, PREGNANCY AND HYPEREMESIS GRAVIDARUM**

*Lead Author: Devin M. Stroman, B.A., M.D.*
*Co-Author(s): Emily Dossett, MD, MTS*

**SUMMARY:**
Studies suggest that 14-23% of all women will experience a depressive disorder at some point in their pregnancy. In 2003, an estimated 13% of women took an antidepressant during their pregnancy; a doubling of the rate since that of 1999 (1). Hyperemesis Gravidarum (HG) is a potentially fatal condition with an estimated prevalence of 0.3-2% (2). It is defined by extreme nausea and vomiting, dehydration, electrolyte imbalance and a loss of pre-pregnancy weight of greater than 5%. Depression and anxiety have been found to be more prevalent in women diagnosed with HG (5). The precise pathophysiology of HG remains unclear. Elevated levels of the gestational hormone human chorionic gonadotrophic (hCG) , variations in estrogen and progesterone and psychiatric conditions have been implicated (2,4). HG is managed with fluid/electrolyte resuscitation, dietary restrictions and antiemetic agents such as the serotonin antagonist ondansetrone (Zofran®). Mirtazapine is an atypical antidepressant that inhibits presynaptic alpha-2 receptors, postsynaptic 5HT2 and 5HT3 receptors and activates 5HT1A receptors. Like ondansetron, its antagonistic effects at 5HT3 are thought to account for its antiemetic property (12). While no randomized control trials exist, case reports suggest symptomatic improvement of HG with the use of mirtazapine. Its combined antidepressant/anxiolytic and antiemetic properties may be superior than standard antiemetic agents in the management of HG. We present the case of 39 year old gravida 2 para 1, Hispanic female with a past psychiatric history of Major Depressive Disorder who was diagnosed with hyperemesis gravidarum and treated with mirtazapine. We further review the available literature to examine the evidence for treatment of HG with mirtazapine and safety profile of its use during pregnancy.

**NO. 180**

**SUPER STORM SANDY: IMPACT ON INPATIENT PSYCHIATRIC UNITS AT A COMMUNITY MENTAL HEALTH CENTER IN BROOKLYN, NEW YORK**

*Lead Author: Bibiana Susaimanickam, M.B.B.S.*
*Co-Author(s): Yasas Tanguturi, M.B.B.S., M.P.H., Scot McAfee, M.D., Theresa Jacob, PhD., M.P.H.*,

**SUMMARY:**
Background: The existing fragile infrastructure for mental health care in New York City suffered a tremendous strain due to the effects of Hurricane Sandy in October 2012. Multiple hospitals in the city were either closed or evacuated. The shutdown of Coney Island Hospital had severe repercussions on acute psychiatric services in the borough of Brooklyn. The inpatient psychiatric units at Maimonides Medical Center Hospital (MMC), with a total capacity of 70 adult inpatient beds were the closest available units that remained open during the storm. Health care providers in the two inpatient units had to deal with the complex challenges in the aftermath of the storm. We hypothesize that Hurricane Sandy lead to a shorter length of stay (LOS), increased readmission rates (within both 15 and 30 days of discharge) and significant changes in diagnosis at admission and disposition planning on the inpatient psychiatric units at MMC.
Aims: 1) To compare the LOS for patients on the inpatient psychiatric units before and after Hurricane Sandy. 2) To measure readmission rates (within 15 days and 30 days of discharge) to the inpatient units and to evaluate if Hurricane Sandy led to a significant increase in readmissions. 3) To evaluate the changes in admission diagnoses and type of disposition that occurred due to Hurricane Sandy on the inpatient units.
Methods: All patients admitted to the two inpatient psychiatric units of Maimonides Medical Center between the dates 10/22/2011 to 10/21/2012 (pre-Sandy) and 10/22/2012 to 10/21/2013 (post-Sandy) are included in this retrospective study. Data on admission rates, average LOS, diagnosis upon admission, type of disposition, and readmissions in one-year periods before and after Hurricane Sandy are compared and statistical analyses performed.
Results: There is a significant increase in the volume of patients who received mental health services in emergent settings at MMC post the hurricane. An increased demand for services led to a greater turnover of patients on the units, with the health care team having to coordinate appropriate dispositions for patients in response to the crisis. This is an ongoing study with preliminary data demonstrating that these changes would be reflected in the indicators described above.
Conclusion: This study was undertaken with the goal of providing important empirical data on the effects of a natural disaster on the functioning of inner-city inpatient psychiatry units when other local hospitals are affected. Data will be valuable for health care administrators and emergency planners; it will help identify deficiencies in the mental health care system and will aid in future planning and disaster preparedness.

**NO. 181**

**TEXTING GOODBYE: HAS MOBILE TECHNOLOGY REPLACED PAPER SUICIDE NOTES?**

*Lead Author: Leah C. Susser, M.D.*
*Co-Author(s): Julie B. Penzner, M.D.*

**SUMMARY:**
Introduction: Traditionally, a suicide note on paper has been a chilling final testimony for the writer. However, modern technology offers new methods for suicide notes, including text message. Most research on the topic studies paper notes, and may not apply to texted notes. We present two cases of texted suicide notes, and propose that texted suicide notes warrant further study.
Cases: P. is an 18 year-old man with depression and one prior suicide attempt. After three days of internet research, he began a lethal method of suicide by chemical ingestion. Partway through his attempt, after waiting for loved ones to fall asleep, he sent goodbye texts, intended for recipients to read after his death. However, inadvertently, a friend received his text that night and convinced him to abort his attempt, resulting in hospitalization. T. is a 32 year-old man with an alcohol use disorder, prior suicide attempts and obsessive thoughts about the ideal suicide plan. While intoxicated with alcohol, he texted his family as he was testing his suicide plan of jumping from a height. After reading his texts, family contacted him to abort the attempt, and T. called the police for help.
Discussion: In the case of P., the texts served as a replacement for paper notes, with the intention of receipt after completion of suicide, evidenced by his extensively planned attempt. Nonetheless, one text was seen instantly, changing the outcome of the attempt. In the case of T., the texts had a different purpose than a paper note. T. intended the texts to be received before completion to convey his need for help. In fact, T. contacted police and stated he wanted to live. These two cases illustrate that texted notes do not always have the same intent or consequence as paper notes. Research indicates that many paper suicide notes are found at the site of the suicide, suggesting that they are intended to be discovered with the writer's body (Ho TP et al. 1998); and paper suicide notes have been associated with suicidal intent and with suicides that require more planning (Zhou XM et al. 2012, Ho TP et al. 1998). It remains unknown whether the same relationships will be found for texted notes, which have not been well studied. Texts can be sent impulsively, without reflection, and cannot be discarded once sent. Also, text messages are usually briefer than paper suicide notes, which average 150-248 words (Bhatia MS et al. 2006, Ho TP et al. 1998). As our means of communication evolve toward brevity and instant interconnectedness, research on the modern-day texted suicide note is needed.
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**NO. 182**

**VASOVAGAL SYNCOPE AFTER INITIAL DOSE OF QUETIAPINE: A CASE REPORT**

*Lead Author: Amy Swift, M.D.*
*Co-Author(s): Dennis Lin, M.D.*

**SUMMARY:**

Introduction:
Side effects of medication often become one of the most important factors in determining course of treatment for psychiatric patients. Doctors must be aware certain side effects, such as Vasovagal syncope, can be very dangerous if they occur outside a monitored environment.
Case Description:
This is a report of 27 year old Asian female who recently moved to the United States with no significant past psychiatric or medical history who was brought in to the psychiatric emergency room by her husband because of depressed mood, paranoid ideation and auditory hallucinations. She was started on quetiapine 25 mg and had a vasovagal response to her first dose. The patient was started on aripiprazole 5 mg daily to target the auditory hallucinations and citalopram 10 mg for a depressed mood. Patient was switched from aripiprazole to quetiapine 25 mg Q12H for more optimal mood stabilization. The patient received her first dose of quetiapine in the late morning. Two hours later, the patient was in the dining area began complaining of blurry vision. She stood up and fell with a brief loss of consciousness. She regained consciousness but was dizzy. Vital signs were checked- BP 47/21 and HR 55. Patient vomited and lost consciousness again. A rapid response team was called. After 5 minutes, the patient was awake and alert with stable vital signs. A medical work up revealed no cause for her vasovagal episode. She was stabilized psychiatrically on citalopram 20 mg daily and aripiprazole 10 mg daily and discharged. She has had no episodes of syncope since.
Discussion:
If risk factors for vasovagal syncope as a side effect of quetiapine were able to be indentified, physicians could take these into consideration when initiating treatment. A literature review did not reveal any studies however, several patient centered websites mention such a relationship. One such website reported that 717 of 63,381 people reported syncope on quetiapine, with the majority of syncopal episodes occurring within 1 month of starting quetiapine. This may be an underreported phenomenon warranting further investigation.
Objectives:
•Identify how commonly vasovagal syncope occurs as a side effect of quetiapine
•What are the risk factors for developing this side effect and are there ways to mitigate this risk
Relevance:
Vasovagal syncope is a very serious and potentially dangerous side effect that physicians should be aware of when prescribing quetiapine. This case highlights 1 patient that experienced vasovagal syncope after her first dose of quetiapine which highlights the importance of more research about such a potentially dangerous side effect and any possible risk factors to be aware of that may be considered when prescribing quetiapine.
Works consulted:
"From FDA reports: quetiapine and Syncope", http://www.ehealthme.com/ds/quetiapine/syncope, accessed July 11, 2013.
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**NO. 183**
**CEREBELLAR CONTRIBUTION TO MOOD REGULATION: A CASE OF DEPRESSION ACCOMPANIED BY LT. CPA MENINGIOMA**

Lead Author: Yeni Synn, M.D.
*Co-Author(s): Yang Tae Kim, M.D., Ph.D., Hee Cheol Kim, M.D., Ph.D.*

**SUMMARY:**
Introduction: Cerebellar roles in human body are not only limited to motor and coordination of movement, but they include mood and cognitive functions correlating with cerebral hemispheres. Structural and functional changes caused by tumors or following surgical resection may therefore cause mood disturbance as well as behavioral predicament.
Case report: We describe the case of a middle aged female patient who presented with depressive symptoms after consecutive deaths of a man that she had had an affair with and her husband. Her present history per se provides psychodynamic and environmental clues to occur depression, however, it eventually turned out to be a left cerebellopontine angle(Lt. CPA hereafter) meningioma case. After resection, she presented severe anxiety, irritability, mood deflection and behavior changes.
Conclusions: In clinical practice, mood symptoms in patients with cerebellar lesions should not be neglected as differential diagnosis in patients with cerebral lesions referring to psychiatrists for recent onset symptoms as irritability, behavioral change, anxiety, mood deflection, mainly depressive symptom, and insomnia. Human mood and cognitive regulations have been mainly considered as exclusive property of cerebral hemispheres. However, mood and cognitive affinities as well as motor coordination are distinguished accomplishments of the cerebellum, exerting reciprocal working balance with cerebral hemispheres. In the case we reportred, indeed, the onset of symptoms and the time of tumor occurrence and resection illustrate the importance of cerebellar function as mood correlator interacting with the basal ganglia. Mood changes may indicate something is going on in the brain, either in cerebrum or in cerebellum, or both.
Key words: depression, Lt. CPA meningioma, cerebellum, mood symptoms

**NO. 184**
**IMPACT OF SEASONAL TRENDS OF POLLEN AND MOLD ON MOOD SYMPTOMS IN PATIENTS WITH SINUSITIS AND SLEEP APNEA**

*Lead Author: Isadore S. Tarantino, B.S.*
*Co-Author(s): John A. Hunter, Psy.D., Cord D. Huston, M.D., Wendy L. Huston, Parmpreet Kaur, Travis W. Mecum, Dmitry Meyerovich, M.D., Vernon D. Rowe, M.D., F.A.A.N., Kenneth R. VanOwen, M.D.*

**SUMMARY:**
Objectives: The objective of this study was to assess whether there was a correlation between depression, anxiety, stress, and vegetative symptoms and seasonal levels of pollen and mold in patients diagnosed with sinusitis and obstructive sleep apnea evaluated in a neurological outpatient clinic population in Kansas City, Missouri.
Background: Vegetative symptoms have frequently been reported in patients with sinusitis. Point prevalence of depression is higher in patients with obstructive sleep apnea. In a retrospective review of 510 patients with obstructive sleep apnea, it was noticed that there was a significant correlation between patients with obstructive sleep apnea and sinusitis (odds ratio

1.94) and a correlation between obstructive sleep apnea and sinusitis and vegetative symptoms (odds ratio 2.2). This led us to investigate if seasonal pollen and mold trends may have influenced depression, anxiety, stress, and vegetative symptoms in patients with sinusitis and obstructive sleep apnea.
Methods: This study is based on a retrospective review of 510 patients who underwent polysomnography while being evaluated in a neurology outpatient clinic. Each patient completed a Depression Anxiety and Stress Scale 21 and Chicago Multiscale Depression Inventory self-assessment scale. Patients were scored on depression, anxiety, stress, and vegetative symptoms. Patients met criteria for depression, anxiety, stress, or vegetative symptoms if they scored at least moderate or higher. Paired T-test was ran on depression, anxiety, stress, and vegetative symptoms with the level of pollen and mold as recorded by Children's Mercy Hospital and Clinics in Kansas City over the same 11 month time period as the polysomnographies. Time lag analysis of one month was assessed.
Results:
Depression : Mold - CI: 95%, Correlation: -0.28, P-Value: 0.4
Depression : Pollen - CI: 95%, Correlation: 0, P-Value: 0.99
Anxiety : Mold - CI: 95%, Correlation: -0.69, P-Value: 0.02
Anxiety : Pollen - CI: 95%, Correlation: 0.67, P-Value: 0.14
Stress : Mold - CI: 95%, Correlation: -0.72, P-Value: 0.01
Stress : Pollen - CI: 95%, Correlation: -0.02, P-Value: 0.94
Vegetative Symptoms : Mold - CI: 95%, Correlation: -0.1, P-Value: 0.78
Vegetative Symptoms : Pollen - CI: 95%, Correlation: 0.12, P-Value: 0.72
Conclusions: No significant correlation was found between pollen or mold and depression, anxiety, stress or vegetative symptoms in patients with sinusitis and obstructive sleep apnea who were seen in a neurological clinic in Kansas City. Some limitations of this study include the potential for development of sinusitis earlier than diagnosed; creating a gap between exposure, development of symptoms and then subsequent diagnosis. Pollen and mold counts were recorded in Kansas City, Missouri and while likely close for surrounding areas – local conditions where patients reside could also have variability based on their local plant life.

**NO. 185**

**THE CORRELATION OF EXCESSIVE INDOOR TANNING WITH DEPRESSION AND SUICIDAL BEHAVIOR AMONG ADOLESCENTS: RESULTS FROM THE 2011 YOUTH RISK BEHAVIOR SURVEY**

*Lead Author: Kelly E. Taylor*
*Co-Author(s): Molly Gathright, M.D., Erick Messias, M.D., Ph.D, MPH*

**SUMMARY:**

Objective: To identify excessive tanning as a risk factor for depression and suicide in teens.
Background: Previous studies have shown the association between indoor tanning and seasonal affective disorder, anxiety, and substance use. According to the 2011 Youth Risk Behavior Survey (YRBS), 12% of the high school population have reported use of indoor tanning. Excessive indoor tanning, defined as tanning 40 times or more in 12 months, was reported in 2.7% of the sample. Since previous studies included college age women, we wanted to know if there was a correlation between frequency of indoor tanning with depression and suicidal behavior among the high school population.
Methods: We used the data available from the 2011 YRBS to study the relationship between excessive indoor tanning with depression, defined as 2 weeks of sadness, and suicide ideation, plan, attempt, and treatment. The YRBS consists of school-based, nationally representative biannual samples (N=15,425). The methodology for the YRBS has been described and is available at the CDC website. Given the majority of people who utilize indoor tanning are young Caucasian females, we controlled for age, race, and gender. The outcome variables included four questions addressing the continuum of suicidal behavior: depression, ideation, plan, attempt, and being treated for suicide. All analyses were conducted using Stata 11. All proportions are reported in tables along with 95% confidence intervals. Adjusted odds ratios (AOR) were calculated using logistic regressions.
Results: There is a positive correlation between reports of depressive symptoms and excessive indoor tanning (AOR 2.25, 95% CI: (1.6-3.2)). There is also a correlation between excessive indoor tanning and suicide ideation (2.7, (1.9-3.9)), suicide plan (2.7, (1.8-4.2)), suicide attempt (4.6, (3.1-6.6)), and treatment for suicide attempt (13.1, (6.8-24.9)).
Conclusions: Adolescents who reported excessive indoor tanning (40 times or more in a 12 month period) may benefit from depression screening in order to decrease risk of suicide.

**NO. 186**

**MOTHER-INFANT RELATIONSHIP DISORDER PRESENTING AS FAILURE TO THRIVE IN TWO WEEK CLD INFANT**

*Lead Author: Melinda A. Thiam, M.D.*
*Co-Author(s): Dominique Crosby, MD; and Dr. Ryo Chun, MD*

**SUMMARY:**

Background: Selma Frailberg's wrote "Ghost in the Nursery" 28 years ago, describing how a new mothers past disrupted attachment with her mother could be intergenerationally transmitted to the present mother-infant relationship. Since then numerous research studies of mother-infant attachment have confirmed Frailberg's observations. We present a case of a mother-child dyad who presented with failure to thrive and significant weight loss secondary to the mother's inability to recognize her child's needs.
Case presentation: Patient was a single African American female who became unexpectedly pregnant with her first child. Patient and baby were discharged to home 4 days after the birth. At two weeks of life, patient brought her infant to a well child appointment and it was discovered that infant was 34% down from his birth weight, lethargic and very ill secondary to malnutrition and dehydration. Infant was subsequently transferred to pediatric intensive care unit were he was stabilized and recovered to full health. During his time in the hospital, staff notice that patient had "odd" affect and appeared disconnected to her infant, and did not appear to be interested in engaging with infant. After son was discharge from hospital, patient was referred to behavioral health for evaluation of possible maternal psychopathology. Maternal impairment appeared to be restricted to her role as a parent; no severe maternal mental illness was identified. Mother's history of poor attachment deemed the primary cause of current maternal dysfunction. The dyad was treated with multi-modal treatment approach to assist in attachment, to include home visit, moth-

er-infant dyadic psychodynamic psychotherapy and mother-infant group psychotherapy. After 3 months, both mother and infant significantly improved and infant achieved both normal weight and age-appropriate social-emotional interactions. Discussion: This case is unique as it demonstrates first hand how maternal psychodynamic pathology can lead to negative physiological consequences in her infant. It also described a unique opportunity for a psychiatry resident to engage in a unique form of mother-infant psychodynamic psychotherapy that often is limited to infant mental health specialists. Finally, it also demonstrated the effectiveness of addressing the mother-infant bond in improving health in both the mother and the infant as well as fostering a health mother-infant bond and infant attachment.

**NO. 187**

**FEASIBILITY OF USING TEXT MESSAGING FOR CONTINUOUS MEASUREMENT OF PHYSICAL SYMPTOMS, MOOD, AND WORRIES IN CHILDREN AND ADOLESCENTS**

*Lead Author: Mette V. Thorgaard, M.D.*
*Co-Author(s): Lisbeth Frostholm, Ph.D.,Tamlin Connor, psychologist, Ph.D., Charlotte U. Rask, M.D., Ph.D.*

**SUMMARY:**
Background
Experience Sampling Method (ESM) - a structured diary technique – can be used to study daily fluctuations in thoughts, mood and symptoms in subjects in their normal living environment. ESM is increasingly used in research as it has several advantages in that it allows assessment in the moment, in the real world, and it provides multiple and continuous measurements. Using ESM in terms of text messaging to study e.g. psychopathology in children and adolescents seems feasible because this group is familiar with text messaging and often carries a mobile phone.
This pilot study on the use of ESM is a part of a larger study on health anxiety and illness behaviour in children and adolescents.
Objective
To examine the potential of ESM (text messaging) for continuous measurement of children's and adolescents' physical symptoms, mood and worries on a daily basis.
Methods
In total 12 children aged 9-17 were included in this pilot study. The children filled out standardized questionnaires about their physical symptoms, health anxiety, mood, general psychopathology, illness behaviour and life quality. In the following week they received text messages 4 times a day with the questions; RIGHT NOW, do you feel; Happy? Physically well? Worried? The answer categories range from 1 (not at all) to 5 (very).
Preliminary results
One child was excluded due to a very low response rate of the text messages (=15%). The remaining 11 children had a response rate of an average of 83% (range 49%-100%). The children aged 9-13 had a response rate of 77% (range 49%-89%, 455 responses out of 588 possible) compared with the adolescents aged 14-17 who had a response rate of 91% (78%-100%, 307 responses out of 336 possible), p<0.001. Analysed by gender, the boys aged 9-13 had a response rate of 81% (range 69%-89%, 205 responses out of 252 possible), the girls in the same age group had a response rate of 74% (49%-89%, 250 responses out of 336 possible), p=0.046. When the response rate in the two age groups were compared among the girls, the girls aged 9-13 had a response rate of 74% (range 49%-89%, 250 responses out of 336 possible), compared to the girls in the age group 14-17 who had a response rate of 91% (range 78%-100%, 307 responses out of 336 possible), p<0.001. There were no boys included in the age group 14-17.
Conclusion
Overall the ESM (text messaging) seemed to be a feasible method to use in this age group. The preliminary data suggest a lower response rate among younger children compared to adolescents as well as a higher response among boys in general compared to girls.
Perspectives
We expect that the main study can provide additional knowledge about the use and feasibility of ESM (text messaging) for continuous measurements of children's and adolescents' physical symptoms, worries and mood on a daily basis.

**NO. 188**

**A DESCRIPTIVE STUDY OF CHILDREN WITH FUNCTIONAL SOMATIC SYMPTOMS REFERRED TO CHILD AND ADOLESCENT MENTAL HEALTH SERVICES**

*Lead Author: Simone Tøt-Strate, B.Sc.*
*Co-Author(s): Gitte Dehlholm, M.D., Ph.D., Charlotte U. Rask, M.D., Ph.D.*

**SUMMARY:**
Introduction/Hypothesis Recurrent physical symptoms with no medical explanation, often named functional somatic symptoms (FSS), affects 10-25% of children and adolescents, and often leads to referral to paediatric settings for further investigations. Only a small group of children with these symptoms are referred to The Child and Adolescent Mental Health Services (CAMHS). However currently no specific guidelines for referral exist. The objective of this study, is therefore to characterize those children with FSS who are referred to CAMHS with regard to clinical and anamnestic characteristics.
Methods The study population consists of 1) children admitted to the Department of Paediatrics Odense in 2012 and who received discharge diagnoses related to functional symptoms (according to ICD-10) and 2) children referred to CAMHS Odense in 2012. Discharge summaries of all medical records were evaluated by 2 child and adolescent psychiatrists and 1 paediatrician and categorised as reporting no, possible or definitely FSSs. All children with FSS were included, and the medical records of the referred and non-referred groups were evaluated by a standardised medical records review. The medical records review was developed for this study specifically, in cooperation with psychiatrists and paediatricians. The review includes items regarding sociodemographic data, early child development, physical and mental illness in the family, negative life events, co morbidity, characteristics of functional symptoms and impairment in everyday life.
Results Collection of data is still in process and is expected to be concluded mid-February. Afterwards, the group of referred children will be compared to the group of non-referred children with respect to:
- sociodemographic data
- occurrence of pseudoneurological and somatoform symptoms

- occurrence of negative life events and co morbidity
- the degree of impairment and duration of symptoms

Conclusions/discussion At the present time, knowledge of characteristics of children with FSS referred to The CAMHS is sparse. This study is one of its first, to systematically describe the anamnestic and clinical factors of importance in the process of referral of children with FSS to the CAMHS, and whether these factors correspond to the few guidelines described in international literature. Potential the results will be able to identify factors of importance to the process of referral and thereby constitute empirical basis for developing more specific guidelines for the referral of children with FSS to Child and Adolescent Mental Health Services.

**NO. 189**

**"I'M A WEEPING WILLOW: MAKE IT STOP!" EXCESSIVE CRYING: DIFFERENTIAL DIAGNOSIS, LITERATURE REVIEW, AND DISCUSSION**

*Lead Author: Samidha Tripathi, M.B.B.S., M.D.*
*Co-Author(s): Kevin C. Hails, M.D.*

**SUMMARY:**

Objectives:

1) Understand the presentation of Involuntary Emotional Expression Disorder (IEED)

2) Review the diagnostic dilemmas differential diagnosis and management for IEED.

Introduction: Involuntary crying can be a part of involuntary emotional expression disorder which can present as excessive inexplicable crying and/or laughing. It can severely disable a patient's quality of life by leading to social isolation and secondary depression. The actual prevalence of IEED is unknown since it is usually under recognized or misdiagnosed as a primary mood disorder. We describe the case of a 55 y/o woman with inexplicable crying spells.

Key words: excessive crying in adults, involuntary emotional expression disorder, pseudo bulbar affect.

Case: Ms H presented to the clinic with sub-acute onset of uncontrolled crying soon after undergoing elective cholecystectomy followed by emergent bowel resection due to perforated duodenal ulcer. She had no prior psychiatric history except an episode of post operative delirium which resolved spontaneously. The crying spells were spontaneous in onset, without any triggers & in the absence of neuro-vegetative symptoms of depression. The spells led to embarrassment, isolation, avoidance of IADLs & increasing dependence on her family. She also reported involuntary movements of arms & legs,tactile hallucinations, visual distortions described as floor and doors moving, fragmented sleep, problems with memory and difficultly carrying out learnt activities (Apraxia) like texting & using a can opener. An underlying cognitive disorder was strongly considered as a differential. Work up: Oriented times three, MoCA: 24/30.CBC w/diff,BMP,LFT was unremarkable. Total cholesterol (240mg/dl) & TSH (13.4mg/dl) was elevated. Medications included Synthroid 200ug, Simvastatin 20mg. CT scan was suggestive of mild to moderate chronic micro-vascular ischemic changes and likely congenital thinning of the right inferior parietal calvarium. EEG-unremarkable. Neurology was consulted to rule out organic causes. Symptoms persisted despite a trial of Sertraline, Mirtazapine & Buspirone at maximum therapeutic doses. Quetiapine was initiated and she is maintained on 200mg.The symptoms persist but she is resisting any further medication adjustment.

Discussion: The differential's for unexplained crying must include Mood disorders; Dementia (Fronto-temporal & Vitamin B12 deficiency);Neurological: post stroke presentation, amyotrophic lateral sclerosis, multiple sclerosis, TBI; Substance induced primarily cocaine induced mood disorder. To rule out mood disorders as a cause, It is essential to distinguish mood from affect. In IEED there is usually a mismatch. IEED is difficult to treat. TCA's have shown limited improvement. SSRI's such as citalopram may be more efficacious. Dextromethorphan and Quinidine combination(Zenvia) has shown better results. The psychosocial impact of IEED is enormous. Finding the right combination for ones patient & ruling out differentials is the key.

**NO. 190**

**MARIJUANA RISK PERCEPTION IN SUBSTANCE USERS: THE EFFECTS OF LEGALIZATION**

*Lead Author: Gerrit Ian van Schalkwyk, M.D.*
*Co-Author(s): Samuel T. Wilkinson, MD, Deepak Cyril D'Souza, MD*

**SUMMARY:**

Marijuana is the most common illicit substance used around the world. Recent trends in the United States have made medical marijuana legal in at least 20 states and the District of Columbia; recreational marijuana is now legal in Washington and Colorado, and several other states are likely to follow suit. Marijuana continues to garner an array of views regarding its risks, both amongst the general public and the medical community. Understanding risk perception is important given existing data that indicates decreased risk perception is associated with an increase in the use of a drug within a population. In particular, it is important to re-examine this question in the case of marijuana, given its changing legal status. In a qualitative study, we sought to explore this issue with a well-informed, at risk sample - people with substance use disorders. In-depth, semi-structured interviews were conducted exploring the perceived risk of marijuana, opinions on its legalization for both medical and recreational purposes, and how this had in turn affected risk perception. A total of 20 interviews were conducted. Our findings were that participants in our study had highly sophisticated views of marijuana. They considered it to be of comparable risk to alcohol, but of less risk than other prescribed medications such as opiates. Participants were variable in their opinion of marijuana's potential effects on mental health, although they all acknowledged it had physical health consequences. For the most part, participants were in favor of legalization for the purposes of specific medical treatments, but were universally concerned about the potential for abuse, with many participants drawing on their own experiences with prescribed opiates. Finally, participants had mixed views about the consequences of legalization, recognizing the potential for both improved regulation and increased tax revenue. However, all participants felt that legalization would lead to increased use, the most common reasons being that it would open the door to broad experimentation (in much the same way that almost everyone tries alcohol at some point), and make the practice socially acceptable. In many cases, subjects who were not currently using marijuana indicated that they would be

more likely to use it if legally sanctioned. In summary, although substance users do recognize some risks to marijuana use, they do not view it as being qualitatively different from alcohol. It is however significant that this analogy is perceived to extend to the issue of legalization, which our participants believed could lead to marijuana being used in similar contexts to alcohol, and more widely than before.

**NO. 191**

**ADDICTION TRANSFER: A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Shilpika R. Varma, M.B.B.S., M.D.*
*Co-Author(s): Ginory Almari, DO*

**SUMMARY:**

Introduction-

"Reward Deficiency Syndrome" is a proposed theory for substituting other dependencies for food addiction commonly seen after Bariatric Surgery. Converging evidence from neurogenetics and neuroimaging studies have supported the concept of linking food and drug craving behaviors. Herein we present a case of a patient who, after gastric bypass surgery, developed alcohol dependence.

Case Report-

A 34 year old single mother with a known Psychiatric history of depression and anxiety since 2003. Patient has only been treated with sertraline (SSRI) for both depression and anxiety since this time. Past medical history is significant for Diabetes, morbid obesity, s/p gastric bypass surgery in 2009. In 2011 patient started drinking 1 bottle of wine nightly. Prior to this patient consumed alcohol socially and discontinued use at age 23 before her pregnancy. Patient never admitted to other illicit substance misuse, but did however endorse nicotine dependence and caffeine dependence both of which increased after her surgery. As patient's alcohol misuse progressed, she was admitted to inpatient alcohol detoxification on 9/2012. Patient noted in her initial outpatient evaluation -"I transferred my food addiction to alcohol addiction". Patient subsequently had 2 relapses from the first admission fostering two inpatient alcohol detoxification treatments. Patient notes attending regular weekly AA meetings to maintain sobriety in her outpatient follow ups.

As patient was being managed at the Psychiatric outpatient clinic it was further revealed that patient met criteria for a Binge eating d/o prior to the conception of her surgery that went unidentified.

Discussion-

This case may possibly demonstrate the neurochemical similarity between food and drugs of abuse, perhaps through a dysregulation of Dopamine. It portrays how compulsive eating mechanisms may play a protective role in decreasing drug reward circuitry hence reducing addictive behaviors. It is therefore necessary in screening and identifying the mechanism of obesity prior to undergoing a surgical weight loss procedure. Although Bariatric surgery has been associated with a decrease in mortality as it reduces metabolic complications it may likely be associated with secondary addictive behaviors in those who are neuro-genetically inclined.

Conclusion-

Reviews describe how chemical dependencies are likely to increase after a gastric bypass. It is for this reason that Bariatric surgeons and Psychiatrists alike need to institute formal screening assessments for both physical and psychological disease processes that are implemented both pre and post operatively. With a goal of finding the culprit, sufficient time can be allotted for patients to engage in treatment. Patients can later be considered for Bariatric surgery while still undergoing treatment postoperatively and improve their outcome and benefits of weight loss surgery.

**NO. 192**

**ROLE OF NALTREXONE IN TREATMENT-RESISTANT DISRUPTIVE MOOD DYSREGULATION DISORDER: A CASE REPORT**

*Lead Author: Deepti Vats, M.D.*
*Co-Author(s): Ankit Parmar, M.D., M.H.A., Rashmi Parmar, M.D. , Manish Aligeti, M.D., M.H.A.*

**SUMMARY:**

Naltrexone, a competitive opioid receptor antagonist, is commonly used agent in treatment of alcohol and opioid dependence. It is also prescribed off-label in repetitive self-injurious behavior, agitation and aggression in children with mental retardation (MR) and pervasive developmental disorder (PDD)1, 2. We report a case of a 14-year-old Caucasian male with a diagnosis of Disruptive Mood Dysregulation Disorder (DMDD) who presented with agitation, verbal and physical aggression, and mood instability. His symptoms were resistant to therapeutic trials of two atypical antipsychotics, namely risperidone and aripiprizole. After starting naltrexone 50 mg daily, his symptoms improved consistently at two and six week follow ups. A trial of tapering the naltrexone resulted in reappearance of symptoms which necessitated the need to restart the medication. This case highlights the need for considering naltrexone sooner in treatment to help avoid long-term metabolic side-effects of atypical antipsychotics and extra pyramidal side effects of typical antipsychotics. Further research is warranted to clarify the role of naltrexone in treatment resistant DMDD

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**NO. 193**

**ROLE OF STIMULANTS IN THE MANAGEMENT OF COGNITIVE EFFECTS OF TRAUMATIC BRAIN INJURIES**

*Lead Author: Divya Vemuri, M.B.B.S.*

**SUMMARY:**

Background: Traumatic brain injury (TBI) is a major public health problem and often presents with neuropsychiatric signs and symptoms, sometimes weeks to months after the injury. Common problems include cognitive, behavioral, and emotional disturbances, which may be secondary to the injury itself and or due to pre and post-injury psychosocial factors. While more attention is being paid to physical consequences of TBI, research on the neuropsychiatric disturbances is still in the early stage.

Method: We describe a clinical vignette of a patient with TBI

presenting with significant cognitive disturbances. A literature search was performed to determine evidence based initial recommendations for common cognitive symptoms.
Result: The patient is a 40-year-old male who presented with problems of memory, and concentration. The symptoms began after a motor vehicular accident one and a half years prior to the office visit. This accident resulted in the patient hitting his head against the steering wheel, leading to a skull fracture. Laboratory work completed prior to the office visit was essentially normal. The patient reported difficulties at work and home. He was unable to continue working as a truck driver as he was unable to remember directions. At home, he reportedly had to write down everything in a journal to remember the time to eat, what bills to pay, and even the conversations he had earlier in the day. An MMSE done revealed a score of 19. Based on the literature review and current evidence based practices, we recommended a trial of stimulants and the patient agreed to a treatment course of methylphenidate.

Conclusion: Cognitive symptoms are common after TBI. There is emerging literature on the use of stimulants and cholinesterase inhibitors for the treatment of post TBI attention and memory problems. However, the field is in need of larger studies to better understand best treatment practices.
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**NO. 194**
**MANAGEMENT OF RESISTANT CATATONIA**
*Lead Author: Beeta R. Verma, M.D.*

**SUMMARY:**
Catatonia is a syndrome of motor abnormality associated with the disorder of thought, behavior and emotions. Catatonia may be associated with significant morbidity and mortality from medical complications. Hence timely diagnosis and management are important. Though ECT remains a powerfully effective and lasting treatment for catatonia, many studies have supported the use of benzodiazepines in the management of catatonia. Lorazepam has been shown to be useful in the short-term management of catatonia. However, there is sparse literature with respect to patients requiring long-term maintenance Lorazepam for catatonia especially after unsuccessful ECT.
We aim to report a patient who had recurrent catatonia that responded to and required Lorazepam for maintenance.

**NO. 195**
**SCHIZOTYPY WITH OBSESSIVE–COMPULSIVE DISORDER: IS THERE ANYTHING IN COMMON? A CASE REPORT**
*Lead Author: Vanessa Vila-Nova*
*Co-Author(s): Cotta Catarina, Jesus Gustavo, Martins João, Durães Diana*

**SUMMARY:**
Although schizophrenia and obsessive–compulsive disorder (OCD) are distinct diagnostic entities, there are substantial areas of overlap between the two disorders in clinical characteristics, affected brain areas and pharmacotherapy. Despite the fact of OCD patients apparently do not have increased risk for developing schizophrenia, schizotypal personality disorder (SPD) has consistently been found in OCD patients. The rate of occurrence of SPD in OCD hasn't already been clarified, varying substantially. The clinical validity of the OCD–schizotypy association has also been supported by showing differences in demographic, clinical characteristics and neurocognitive findings in OCD patients with and without schizotypal features. OCD patients with associated SPD exhibit a more deteriorative course and poorer prognosis than those with ''pure'' OCD. Overall, a category of OCD with schizotypal features seems to have clinical and predictive validity and probably etiological specificity. Therefore, the scientific society has been suggesting that the association of OCD with schizophrenia and of schizotypy with OCD, represents specific subtypes of the disorders, rather than a generally high rate of comorbidity between serious disorders. Some authors also believe that comprehensive phenotyping of homogeneous subgroups on an OCD–schizophrenia axis may eventually contribute to the identification of common genetic and environmental factors that contribute to the development of OCD, schizophrenia and their comorbid forms.
To illustrate the difficult clinical approach of this subject, it is reported a case of a 33 years old man with schizotypal personality disorder, who also developed obsessive ideas. The patient has been isolating himself from society, not only because of the personality disorder but also due to the obsessive idea regarding the possibility of his presence could cause harm to someone.

**NO. 196**
**"TO SEE OR NOT TO SEE": SCHIZOPHRENIC ILLUSIONS WITH NORMAL NEUROIMAGING, TWO CASE REPORTS**
*Lead Author: Anureet Walia, M.D.*
*Co-Author(s): Venkata Kolli, M.B.B.S., MRC.Psych, Katrina Koclanes, M3 Student, Jayakrishna Madabushi, M.D.*

**SUMMARY:**
Learning objectives:
1) Participants will be able to understand the neurobiology of illusions in schizophrenia
2) Screening for illusions and distinguishing them from other psychopathology.
Introduction:
Schizophrenia is a complex neuropsychiatric disorder with predominant disturbance in thought process and perception. Hallucinations have commonly been described in schizophrenia, but illusions have been less frequently reported. We report two cases of illusions in patients with schizophrenia with normal brain imaging.
Cases:
Case 1: A 31-year-old female patient with schizophrenia reported that she had observed some people having expansion of their pupils across the cornea to the sclera. She reported that this makes the sclera dark, leaving only a small rim of white

sclera in the eye. She also reported being perplexed by this observation but did not attach any delusional significance to it. Other psychopathology included vague persecutory delusions and visual hallucinations.
Case 2: A 23-year-old female patient with schizophrenia reported that she is unable to see herself in the mirror. She reports seeing several people in the mirror at the same time but not her own reflection. This symptom improved gradually with better antipsychotic compliance, to seeing only a stranger's face with a different hair color. However, she was able to see her reflection very briefly in the "right light".
Discussion:
A good connection between perception and integration of concepts is important in the psychopathology of illusions and this connection is impaired in schizophrenia. Patients with schizophrenia exhibit more susceptibility to Muller-Lyer illusion, as early as in the prodromal phase. They also exhibit deficits in perception, by seeing a greater number of strange faces during mirror gazing. Interestingly, patients with schizophrenia cannot perceive hollow mask illusions as well as the normal population. This could be due to over reliance on external stimulus rather than internally driven concepts in schizophrenia. Both these patients exhibited treatment resistance with failure to different antipsychotics. We wonder if there is any association of prominent illusions and treatment resistance.
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**NO. 197**

**THE ETHICS OF DISCLOSING GENETIC TESTING RESULTS IN THE CONTEXT OF INTELLECTUAL DISABILITY AND GUARDIANSHIP: A CASE OF HUNTINGTON'S DISEASE**

*Lead Author: Mark B. Warren, M.D.*
*Co-Author(s): None*

**SUMMARY:**

Title: "The ethics of disclosing genetic testing results in the context of intellectual disability and guardianship: a case of Huntington's disease"
Author: Mark, B. Warren, M.D., Resident, Mayo Clinic Department of Psychiatry and Psychology
Background/Objective: With advances in the ability to detect heritable diseases, the ethical dilemmas that arise from rapid technological advances have received increased academic and public scrutiny. As yet, guidelines for clinicians remain ill-defined and the practitioner must rely on established ethical principles, standards of practice, existing case literature, colleagues, and, where available, expert legal and ethical recommendations. This difficult navigation is compounded in cases where guardians request testing of an individual with intellectual disability in the absence of the patient's consent.
Methods: A patient with mild intellectual disability and guardianship in place was treated for mood symptoms in the context of diagnosed but undisclosed Huntington's disease. The patient was unaware of the diagnosis for an extended period of time, ostensibly to reduce anxiety and promote psychological well-being. Careful longitudinal discussions with the patient's guardians were undertaken in addition to a discussion with an institutional ethics committee.
Results: In light of the patient's progressive motor symptomatology, the decision was made by the guardians to disclose the diagnosis to the patient to help facilitate specialty care. The patient was receptive, demonstrated an understanding of the diagnosis and was able to appropriately discuss fears, anxieties and memories of relatives who had died from the illness.
Conclusions: The decision to obtain genetic testing and the disclosure of results has potentially broad implications for insurance coverage, family planning, stigmatization, acquisition of resources and psychological well-being. Further research needs to be undertaken to better understand the benefits and risks of genetic testing. The careful development and implementation of guidelines for obtaining and disclosing genetic testing results is needed, especially to offer direction in difficult clinical scenarios such as the present case, where testing is sought by a patient's guardian.

**NO. 198**

**AMANTADINE AUGMENTATION FOR SSRI-RESISTANT PATIENTS WITH OBSESSIVE-COMPULSIVE DISORDER: AN OPEN-LABEL STUDY**

*Lead Author: Shira Weizman, M.D.*
*Co-Author(s): Rafael Stryjer, M.D., Dana Budnik, M.D.,Tania Ebert,M.D., Tamar Green,M.D., Lea Polak,M.D., Baruch Spivak,M.D.*

**SUMMARY:**

Glutamatergic dysfunction may play a role in the development of obsessive compulsive disorder (OCD) and glutamatergic modulation may ameliorate some of the OC symptoms. We evaluated the effectiveness of amantadine (AMN) -a weak, noncompetitive, antagonist of the N-methyl-D-aspartic acid (NMDA) receptor - as an adjunctive therapy to selective serotonin reuptake inhibitors (SSRIs), and its role in improving OC symptoms in cases refractory to SSRI alone.Eight patients (5 males and 3 females, aged 42.6 ± 13.1 years) that met DSM-IV-TR criteria for OCD, scored above 20 points on Yale Brown Obsessive Compulsive Scale (Y-BOCS) and were unresponsive to at least one SSRI, completed an open label study of 6 weeks duration. AMN was added to the current and stable SSRI regimen and a statistical analysis compared baseline and endpoint outcome measures.A significant reduction in total Y-BOCS scores (28± 4.5 vs. 18.8 ± 8.8; $p<0.01$; df=7; t=2.36), Y-BOCS compulsion sub-scale scores (15.3 ± 3.2 vs. 10.6 ± 4.7; $p<0.02$; df=7; t=2.36), and Y-BOCS obsession sub-scale scores (12.7 ± 3.3 vs. 8.1 ± 5; $p<0.05$; df=7; t=2.36)was obtained at endpoint. AMN adjunction to SSRI treatment may lead to a significant reduction in OC symptoms, supporting the hypothesis that glutamate neurotransmission abnormalities may play a role in the pharmacotheray of OCD . A large-scale,double blind placebo-controlled study is warranted to substantiate our results.

**NO. 199**

**"DO YOU HEAR WHAT I HEAR?" MUSICAL HALLUCINATIONS IN A PATIENT WITH AMANTADINE-INDUCED PSYCHOSIS**

*Lead Author: Barbara Wilson, M.D.*

**SUMMARY:**
Musical hallucinations represent a sub-type of auditory hallucinations whereby patients perceive either instrumental music, individual notes or musical sounds, or songs. Typically, musical hallucinations are the result of hearing loss, a brain disease (stroke, tumor) or a psychiatric illness. A smaller subset of people develop musical hallucinations from particular drugs, but acquired hearing impairment usually accompanies this symptom. This case report documents an incident of drug-induced musical hallucinations in the setting of acute kidney injury in a younger, hearing intact man with depression. Removal of potentially offending agents and treatment with an atypical antipsychotic, quetiapine, eventually alleviated his symptoms.

**NO. 200**

**MUSICAL MNEMONICS TRAINING IN A PATIENT WITH ANTEROGRADE AMNESIA**

*Lead Author: Aubrey E. Winn, B.Sc.*
*Co-Author(s): Julie E. Garrison, M.A., Vanessa R. Green, D.O., Andrew T. Slye, DO., David A. Williamson, M.D.*

**SUMMARY:**
Introduction
Musical Mnemonic Training (MMT) is a therapeutic modality that has shown benefit for patients with some types of memory problems. MMT was utilized during therapy with the goal of aiding a patient in completing tasks of daily living.
Case Report
A young adult female with profound cognitive impairments presented nine-months after surgical resection of a Grade II Astrocytoma arising from the left anterior thalamus. Prior to diagnosis, the patient complained only of increasing headache but no cognitive deficits. Surgical resection took place one month after diagnosis with 80-90% tumor burden removed leaving a small residual calcified tumor remnant. Post-operatively she manifested profound cognitive deficits and difficulty executing all activities of daily living; she failed to progress in rehabilitation. The patient's short-term memory lasted only 60 seconds; additionally she evidenced decreased spontaneous expression of emotion, word-finding difficulty, and disorientation associated with emotional lability.
Our patient was admitted to the neuropsychiatry service at her husband's request because impairments were persisting despite nine months post-surgical recovery time. Her examination yielded lack of spontaneous movement, apathy, passive personality changes, and poverty of speech. She was unaware of her impairments and could not state why she was in treatment. On cognitive examination, the patient scored 17/30 on MOCA. She was unable to complete cube, clock draw points for contour and numbers were lost, and she scored 0/5 for delayed recall. She was unable to identify the date, day of week, place, or city.
Methods
Music Therapy was initiated to address memory impairments with a goal to increase the patient's ability to recall specific daily tasks using MMT. Additionally, because the patient has a background in music, we considered MMT as a potentially successful therapeutic modality.
Results
Due to this therapy, the patient has demonstrated ability to retain new information for the first time since her surgery. She can recall the name of her music therapist, which is a great improvement given her inability to remember other new names. She memorized an increasing number of phrases of the "Shower Song" while participating by playing a drum. The long-term goal of this exercise is for the patient to sing a song leading her through the steps necessary for her to shower independently.
Discussion
Due to the pre-MMT symptoms of incapacitating anterograde amnesia, the results of improved memory were encouraging. In this patient's case, the therapeutic approach to increase her memory through MMT is supported by her prior music background. We hope this simple case study may encourage future support for using music to improve functional memory in severe brain injury patients. Moreover, further study is needed to address if this modality is equally effective for patients with and without a musical background.

**NO. 201**

**TOO RISKY? WHO DECIDES? A CASE OF STIMULANT USE IN A PATIENT WITH A CARDIAC HISTORY AND HYPERTENSION**

*Lead Author: Christine Winter, D.O., M.B.A.*
*Co-Author(s): Margaret McKeathern, MD*

**SUMMARY:**
Introduction:
Stimulants are a standard of treatment for Attention Deficit Hyperactivity Disorder in both adults and children. However, the use of stimulants in cardiac patients has been historically considered to be of a greater risk than benefit. Studies in healthy patients have demonstrated both increases and decreases in heart rates and blood pressures during stimulant treatments. The question to be answered is: Can the risks of a cardiac patient be mitigated to allow for the benefits of treatment with a stimulant?
Case:
The patient is a 36 year old male with a psychiatric history of Attention Deficit Hyperactivity Disorder and Post Traumatic Stress Disorder with chief complaints of difficulty with concentrating, irritability, and insomnia. He was previously treated with short acting stimulants with good benefit. He suffered an idiopathic thoracic aortic aneurysm with spontaneous dissection requiring emergent repair in January 2009. He underwent a David's procedure but continues to struggle with hypertension, aortic stenosis, and a bicuspid aortic valve. This patient presented to the Adult Behavioral Health Clinic requesting to restart stimulant treatment as he and his wife believe that the benefits of the treatment outweigh the risks associated with his cardiac and vascular history.
Results:
The patient and his wife partook in numerous appointments to discuss his understanding of the risks of the requested treatment and treatment options. He was agreeable to lifestyle changes to minimize lifestyle risks and participated in monitoring of heart rate and blood pressure both with and without stimulants to determine his personal risk with the stimulants. He was found to have a baseline uncontrolled hypertension that was addressed with medication modifications. This patient was able to realize a lifestyle benefit with a stable dose of long acting stimulants while addressing his cardiac issues.

Discussion:
The risk versus benefit question is common in medicine and is often overlooked in psychiatry. Physicians make treatment decisions on a daily basis with preset standards of care that at times conflict with the patent's desires. The patient's best interest is classically referred to in these cases and in many situations the treatment varies from that which is desired. In this case, the patient's understanding of the risks was clearly identified and he was able to provide specific descriptions of the perceived benefits. This case is a situation that required a closer look at the risk – benefit ratio from the patient's perspective rather than the usual physician's standard of care.

**NO. 202**
**COMORBIDITY OF BIPOLAR DISORDER AND CANNABIS USE DISORDER: A REVIEW**
*Lead Author: Yang Xu, M.D.*
*Co-Author(s): Igor Galynker M.D. Ph.D., Zimri Yaseen, M.D.*

**SUMMARY:**
Background:
Bipolar Disorder (BD) is associated with high co morbidities of substance use disorders, among which cannabis use disorders have been consistently reported as the most prevalent. Since the discovery of the endocannabinoid system, accumulating data have suggested that cannabis may influence individuals at risk and affect the development and course of psychotic and mood disorders. However, the relationships between cannabis use and bipolar disorders are complex and remain incompletely described. This study aims to review the current knowledge on cannabis use and its impact in the bipolar disorders population.
Method:
We undertook a systematic review of PubMed using the search terms "bipolar", "mania", "manic", "rapid cycling", "manic depressive", "cannabis", "cannabinoid", and "marijuana", and identified 236 papers published between 1972 and October of 2013. Papers written in languages other than English are excluded and the rest of the papers were screened by hand. Forty-one papers reporting findings relevant to associations of bipolar disorders with cannabis use disorders or cannabis use are included in this review.
Results:
Existing clinical literature consistently reported high prevalence of cannabis use and cannabis use disorder among patients with bipolar disorders. Despite anecdotal evidence reported that patients may start using cannabis to moderate their manic symptoms, prospective studies have not provided evidence to support the self-medication hypothesis. Existing clinical and epidemiological data found that cannabis use increased risk of bipolar disorder, while the dose-response effect between cannabis use and bipolar disorders remains unclear. Heavy cannabis use is associated with reduced age of onset of bipolar disorders, prolonged length of manic episodes, and greater severity of bipolar disorders and poorer life of quality. Moreover, cannabis use disorder among individuals with bipolar disorders may associate with increased risks of other comorbidities and poor medication compliance. However, knowledge in treatment modalities for comorbid bipolar cannabis use disorders is lacking. Experts' opinion recommends adding valproic acid to lithium as a first-choice pharmacological treatment in this population, though evidence remains limited.
Conclusion:
Overall, heavy cannabis use is associated with a severe symptomology of bipolar disorders and greater challenge for treatment. Future prospective studies with sufficient sample sizes are warranted for further examination of the interaction between bipolar disorders and cannabis use.

**NO. 203**
**A BITTER PILL TO SUPPLEMENT: CASE REPORT ON PSYCHIATRIC SYMPTOMS ASSOCIATED WITH DIMETHYLAMYLAMINE AND CAFFEINE COMBINATION**
*Lead Author: Sanjay Yadav, M.D.*
*Co-Author(s): Amol Chaugule, M.D., Aftab Khan, M.D.*

**SUMMARY:**
Background:
In a National Health Survey, over 50 % of the adults said they had used a dietary supplement within the past month. As of 2013, FDA had received 86 reports of illnesses, which included increase in blood pressure, arrhythmias, loss of consciousness and at least 2 deaths of active duty soldiers from cardiac arrests associated with supplements containing DMAA. DMAA (1, 3- dimethylamylamine) has recently become popular as a pre-workout supplement, claiming to be effective as weight loss agent and athletic performance booster. Caffeine often overlooked as an active ingredient; is one of the most common ingredients in pre-workout supplements.
Case Presentation:
We present a case of 20-year-old male, college student, with medical history of hypertension and no prior psychiatric diagnosis, who was referred to outpatient psychiatry clinic following concerns of suicidal urges, paranoid ideation, out of body experiences, nervousness, chest discomfort, self–injurious behavior on and off for the previous 6 months. These symptoms occurred at irregular intervals and each time lasted for 1-2 weeks with complete interval resolution. CBC, CMP, EKG, CT Head were normal. Urine drug screen was negative. He was closely monitored with frequent follow-ups at outpatient clinic; patient reported no recurrence of symptoms for the next 2 months. Subsequently, he was admitted to inpatient psychiatric facility with reemergence of suicidal ideation, loss of sleep & appetite and paranoid ideation. By day 3 of hospital admission, he denied having any of the symptoms. Upon discharge, he informed that he had been sporadically consuming 1-2 capsules of DMAA and caffeine containing supplement to help with his pre-workout routines, for the previous 9 months. Retrospective review of episodes, recurrence intervals of symptoms correlated with the period patient had been using the supplement. Patient has been free of all psychiatric symptoms for the past 8 months since discontinuing the supplement.
Discussion:
To our knowledge, psychiatric presentation of events related to dietary supplement containing DMAA and caffeine combined, have not been published before. Animal studies confirm DMAA's sympathomimetic properties, acting as a norepinephrine reuptake inhibitor. Adverse effects of high dose caffeine include arrhythmias, restlessness, anxiety, insomnia and nervousness. In the case described, no causal relationship between the supplement ingredients and psychiatric adverse events can be confirmed. However, based on DMAA's stimulant properties similar to ephedrine & amphetamine, these symptoms could

be expected of DMAA alone or in combination with caffeine.
Conclusion:
Dietary supplement use is common and adverse reactions can be dangerous and potentially lethal. Clinicians should be aware that many dietary supplements contain central nervous system stimulants that increase the risk of multiple system adverse events including psychiatric symptoms.

**NO. 204**
**HIDDEN DISEASE: MIDDLE-AGED ONSET OF MANIA AND PSYCHOSIS REVEALED AS PROFOUND LEUKOENCEPHALOPATHY**
*Lead Author: Philip M. Yam, M.D.*
*Co-Author(s): Vincent F. Capaldi II, Sc.M., M.D.*

**SUMMARY:**
Introduction: Organic brain diseases often mimic psychiatric disorders. Making the diagnosis can be difficult because of the many ways that mental illnesses present themselves. First-onset mania or psychosis usually emerges in the late teenage years to early twenties. If these symptoms develop later in life, clinicians often consider other etiologies such as infections, iatrogenic causes, neoplasms, vasculitides, toxins, or metabolic disturbances. In this case, we present a forty-five year old woman with leukoencaphalopathy who presented to a psychiatrist with symptoms of bipolar disorder. The term leukoencephalopathy covers various causes of white matter disease that can disguise itself as primary mood or psychotic disorders.
Case: This is a forty-five year old woman who was referred to a psychiatrist for periods of rapid speech, paranoid thoughts, visual hallucinations, and delusions. Given these symptoms, the patient was diagnosed with bipolar I disorder. Haloperidol was prescribed for treatment of manic episodes resulting in partial abatement of symptoms over the course of one year. Functionally, the patient was unable to maintain an occupation and was cared for by family members. She struggled with non-adherence to prescribed antipsychotic medications resulting in re-emergence of symptoms. Depot injections of haloperidol were initiated to improve compliance. After her second dose she deteriorated, displaying neurological deficits in speech, movement, and cognition, which were assumed to be extrapyramidal side effects. After two months of outpatient management with anticholinergic or antiparkinson medications, she showed no improvement. The patient's MRI showed widespread nonspecific white matter disease suggesting toxic leukoencephalopathy or metachromatic leukodystrophy. The patient screened negative for exposure to toxic chemicals, medications, or illicit drugs. Arylsulfatase A levels were significantly low. Urine sulfatides were negative, suggesting an Arylsulfatase A pseudodeficiency. The patient was diagnosed with undifferentiated leukoencephalopathy given that a specific inborn metabolic enzyme deficiency was not found. Twelve months post diagnosis, she showed mild recovery in her neurologic symptoms though she continued to have significant cognitive dysfunction.
Discussion: Undifferentiated leukoencephalopathy is a rare disorder that often presents with psychiatric symptoms. Routine imaging of psychiatric patients is inefficient and expensive. In this presentation we review the evidence based indications for radiologic imaging in psychiatric patients and the proposed pathophysiology of undifferentiated leukoencephalopathy. Early identification of leukoencephalopathy may decrease morbidity and mortality. Clinicians should have a high index of suspicion for this and other neurologic disorders in the context of acute clinical deterioration, visual hallucinations, and delayed onset of psychiatric symptoms.

**NO. 205**
**FAHR'S DISEASE: A CASE OF MISIDENTIFICATION INVOLVING PSYCHIATRY, NEUROLOGY, AND LAW ENFORCEMENT**
*Lead Author: Bryan Yang, M.D.*
*Co-Author(s): Julia Chung, M.D., Bernadette Grosjean, M.D.*

**SUMMARY:**
BACKGROUND: Idiopathic bilateral basal ganglia calcification (BGC), otherwise known as Fahr's Disease, is a rare syndrome characterized by abnormal deposits in the basal ganglia. Manifestations can include movement disorder (tremor, ataxia and parkinsonism), cognitive impairment (such as progressive subcortical dementia) and psychiatric symptoms. Psychotic manifestations may include hallucinations, delusions, ideas of reference and catatonia. The symptomatology of Fahr's disease can easily be mistaken for many other diseases, making the presentation confusing and diagnosis difficult. We report a case of Fahr's disease that presented with psychomotor slowing, tremor and behavioral changes and then became entangled in the legal system.
CASE: Mr. Q is a 32 yo male with no significant history of substance abuse, psychiatric or medical illness. He presented to the psychiatric ER with a 3 week history of selective mutism and bizarre behavior. Mr. Q was in his usual state of health prior to being prescribed promethazine for a cold a month earlier. Family reports he then began to display mutism and uncharacteristic behavior: taking his pants off in public and attempting to touch women inappropriately. In the ER his mutism partially subsided after receiving lorazepam. Mr. Q was noted to have bilateral upper extremity tremor. CBC, metabolic panel, TSH, RPR, urine toxicology and LP were unremarkable. Noncontrast head CT revealed mild global atrophy and extensive bilateral calcifications. Mr. Q was discharged with quetiapine 25 mg daily PRN agitation. At follow up we learned that Mr. Q was involved in a car accident and arrested for suspicion of driving under the influence. Officers observed Mr. Q to have unsteady gait, lack of smooth pursuit and hand tremors when they arrested him. A jail physician attributed the tremor to substance withdrawal despite absence of laboratory evidence. At follow up he presented with blunted affect, selective mutism, cognitive slowing, hypokinesis and disinhibition. 2 months later, the neurologist noted left upper extremity tremor, cogwheel rigidity, bradykinesia, poor motor skills with truncal ataxia and poor executive functioning. MMSE was 27/30. Calcitonin, toxoplasma IgG, and PTH were unremarkable.
DISCUSSION: Idiopathic BGC is a rare neurodegenerative disorder that can present with a multitude of neuropsychiatric symptoms. Treatment is symptomatic and prognosis is unknown. In our patient, Fahr's Disease was most likely exacerbated by promethazine, causing parkinsonism and catatonia. This case demonstrates the convergence of psychiatry, neurology, and law and highlights the need for interdisciplinary collaboration and education for colleagues without medical backgrounds who encounter our patients in different settings.

**NO. 206**
**HYPERVENTILATION IN POSTTRAUMATIC STRESS DISORDER**

*Lead Author: Brady L. Yates, D.O.*
*Co-Author(s): Frances Stewart, M.D., Tara Staver, Psy.D., Patcho Santiago, M.D., M.P.H.*

**SUMMARY:**
Hyperventilation, defined as a transient increase in minute ventilation compared to metabolic need, has been observed in a wide range of anxiety disorders and has been attributed to be both a cause of and a result of anxiety. However, to our knowledge there has been limited literature examining the prevalence of hyperventilation in Posttraumatic Stress Disorder (PTSD). PTSD presents with a wide range of somatic symptoms in addition to those described in the DSM criteria. Hyperventilation is known to cause many of these same somatic symptoms. Also, hyperventilation and PTSD involve an increase in sympathetic response, which establishes a theoretical expectation of co-occurrence. Hyperventilation involves hippocampal and amygdala hypersensitivity to carbon dioxide causing a sympathetic "fight or flight" response to increase the central respiratory drive and reduce PaCO2. Similarly, recent research has focused on the association between PTSD and sympathetic responses as demonstrated by down regulation of adrenergic receptors and elevated levels of norepinephrine (Geracioti et al). This proposed study will examine the occurrence of hyperventilation in military service members diagnosed with PTSD. Military service members with combat experience, engaged in specialized treatment for PTSD at a tertiary care center participated in psycho-physiologic stress profiles measuring respiratory rates at baseline and during three, two minute recovery periods following two cognitive tasks with a description of a stressful event. Additionally, the patients completed the Nijmegen questionnaire, a validated screening questionnaire for hyperventilation syndrome (van Dixhoorn and Duivenvoorden), at baseline.
A high prevalence of hyperventilation in patients with PTSD could lead to additional measures in the assessment of PTSD as well as possible treatment methods involving biofeedback therapy and breathing training to reduce the sympathetic response of hyperventilation and thereby influence the adrenergic response seen in PTSD.

**NO. 207**
**A NATURALISTIC STUDY FOR LONG-TERM EFFECTS OF ADHD MEDICATION ON HEIGHT AND WEIGHT IN KOREAN SCHOOL-AGED BOYS WITH ADHD**

*Lead Author: Chan Woo Yeom, Psy.D.*
*Co-Author(s): Chan-Woo Yeom, M.D.1), Eui-Joong Kim M.D., Ph.D.1), Eun-Jeong Joo M.D.1), Ph.D., Kyu-Young Lee M.D., Ph.D.1), Young-Jin Koo, M.D., Ph.D. 2)†*

**SUMMARY:**
Objective : This study performed naturalistically to observe the long-term effects of ADHD medications on growth rates among Korean school-aged boys with ADHD.
Method : Boys with ADHD aged 6 to 11 years were recruited for the study, who have attended scheduled visits monthly or bimonthly for receiving ADHD medication, methylphenidate (extended release) or atomoxetine with measuring height and weight. Thirty five boys with ADHD (mean age at baseline=7.90±1.77 years; mean age at endpoint=12.54±1.91 years) were included in this analysis, whose follow-up periods were 2 to 9.7 years (4.64±1.62 years). Height, weight and body mass index (BMI) measurements were converted to "age-corrected Z-scores" using by data from Growth Charts provided by Korean Center for Disease Control and Prevention from 2007.
Results : Age-corrected endpoint growth parameters(height, weight, BMI Z-scores) were not significantly different from the baseline values (height t=.027; weight t=-0.61; BMI t=-1.86). The correlation between the baseline and endpoint height Z-scores was especially high (r=0.876, p<.001), the coefficient of determination r2 was 0.767, which means that the amount of variability in endpoint height Z-scores explained by the baseline height Z-scores is 76.7%.
Conclusions : Our results suggested that the long-term effects of ADHD medications on growth parameters appeared to be tolerable in Korean school-aged boys with ADHD.
Keywords : ADHD, pharmacotherapy, long-term effects on growth

**NO. 208**
**A STUDY OF DEPRESSION SCREENING IN PRIMARY CARE SETTINGS IN CHINA**

*Lead Author: Layan Zhang, M.D., M.Psy.*
*Co-Author(s): Yanhong Hao, M.D., Eliot Sorel, M.D., Tao Zou, M.D., Ph.D*

**SUMMARY:**
Background: Major depression is a common and treatable mental disorder that can be costly and debilitating to patients. Depression has been identified as a leading cause of burden in the Global Burden of Disease 1990, 2000 and 2010 studies (Ferrari et al. 2013), and determined as a robust independent risk factor of shortening life span of 25 to 30 years and developing stroke, cancer, cardiovascular disease, and type II Diabetes (Voinov et al. 2013). However, a potentially high hidden prevalence of underdiagnosed and undertreated depression may be existed due to lack of routine depression screening in primary care settings (Rosenthal 2003). The present study was conducted to screen for depression among patients attending primary health care clinics in three weeks at two geographically distant and socio-culturally different regions of China.
Methods: Participants were patients seeing internists at outpatient clinics (functioning as primary care settings in China) in two different parts of China i.e. North and South regions during a period of three weeks. With informed consent, patients were screened for depression using Patient Health Questionnaire (PHQ-9) which has been psychometrically verified for depression screening in Asian primary care settings (Sung et al. 2013).
Results: A total of 823 patients (51.0% women, 49.0% men) in the primary care clinics were screened. As per PHQ-9, only 8.3% of the whole sample scored 0 corresponding to no depressive symptoms at all. 93.3% of patients had different level of depressive symptoms: 33.0% had minimal (scored 1-4), 34.3% had mild (scored 5-9), 16.4% had moderate (scored 10-14), 5.7% had moderately severe (scored 15-19) and 2.4% had severe depression (scored 20-27). Most patients with depression had medical co-morbidities. In the current study, Diabetes Mellitus was proved to be most common comorbid medical condition in patients having depressive symptoms, followed by Digestive Diseases and Cardiovascular Diseases.
Conclusions: The prevalence of depressive symptoms in patients attending primary care settings in China is strikingly

high. Diabetes Mellitus, Digestive Diseases and Cardiovascular Diseases were the most common medical disorders associated with depression.

**NO. 209**

**MALINGERING IN THE PSYCHIATRIC ER: CHALLENGING PROBLEM, A POSSIBLE SOLUTION?**

*Lead Author: Atika Zubera, M.D.*
*Co-Author(s): Mahreen Raza, M.D., Eric Holaday, MS III, Rashi Aggarwal, M.D.*

**SUMMARY:**

Aims/Objectives:
1. To illustrate the use of the M-fast scale as a screening tool for malingering of psychiatric illness in the emergency room setting.
2. To improve the efficiency of triaging psychiatric patients and improve patient management in the psychiatric emergency room.
Background:
The M-FAST is a screening tool to help differentiate between genuine and feigned psychiatric illness. Previous studies have shown psychiatric malingering is difficult to differentiate from genuine psychiatric illness even amongst trained clinicians. The M-FAST is a 25-item test conducted in the setting of a structured interview that seems most appropriate for use in the emergency triage as it takes only a few minutes to administer and has been shown to effectively detect malingering across several different psychiatric disorders in diverse patient populations.
Methods:
Literature review on the PubMed search engine with the terms, " M-fast, Malingering, Psychiatric emergency room", was done to look into the past literature done in the past to assess the effect of utilizing the M fast scale in emergency settings.
Discussion:
A PubMed literature search revealed 7 articles discussing use of the M-FAST in the context of differentiating psychiatric malingering from psychiatric disease. No articles were found that specifically investigated the M-FAST use in the setting of a psychiatric emergency department. In the M-FAST screen, each item consists of a question with a yes or no answer, with 6 or more positive items considered to indicate psychiatric malingering. Previous studies have found the M-FAST to be highly sensitive for detecting psychiatric malingering in several ethnically and socially diverse patient populations such as forensic psychiatry patients and PTSD in war veterans.
The M-FAST is valuable as a screening tool that can help ensure limited emergency room resources are efficiently allocated compared to the SIRS test which requires nearly 45 minutes to administer. Also, since the M-FAST is administered in a structured interview format, it can be used with illiterate patients who would be unable to complete written assessments. Lastly, it is appropriately designed as a screening tool, in that it has been demonstrated to have a high sensitivity, making it useful to rule out psychiatric malingering in a large population, as opposed to detecting and diagnosing malingering in a single individual.
Conclusions:
We hope to educate the mental health staff the advantages of using an objective scale, M fast in the emergency room which could help with:
1. More confidence in patient dispositions and decreased the liability for the clinicians.
2. Decrease the likelihood of error based solely on clinical judgment.
3. Improve efficiency in utilization of hospital resources by avoiding unnecessary hospitalizations due to psychiatric malingering.

**NO. 210**

**PARKINSONISM AND TRANSCRANIAL ULTRASOUND IN SCHIZOPHRENICS**
**AND HEALTHY RELATIVES: SEX AND LATERALITY**

*Lead Author: Danielle Kamis, B.A.*
*Co-Author(s): Lee Stratton, B.A., Maria Calvó, M.D., Eduardo Padilla, M.D., Nestor Florenzano, M.D., Gonzanlo Guerrero, M.D., Beatriz Molina-Rangeon M.D., Juan Molina B.A., Gabriel de Erausquin M.D. Ph.D.*

**SUMMARY:**

We tested the hypothesis that loss of substantia nigra neurons in subjects at risk of schizophrenia (1), as reflected by midbrain hyperechogenicity (2) and parkinsonian motor impairment (3), is asymmetric and influenced by sex. We evaluated 62 subjects with never-treated chronic schizophrenia, 80 of their adult, unaffected first degree relatives and 62 healthy controls (matched by sex and age of the cases), part of an Andean population of Northern Argentina. Parkinsonism was scored blindly using UPDRS-3 on videotaped exams by 2 independent raters. Trancranial ultrasound was performed by an expert sonographist blind to subject condition with a 2.5 MHz transducer through a temporal bone window. Quantification of echogenic area was carried out on saved images by a different evaluator. We found a significant difference in parkinsonian motor impairment between patients, their relatives as well as controls. All three groups showed worse parkinsonism on the left side than the right, corresponding with increased echogenicity on the right substantia nigra compared with the left. Females had less asymmetry, and overall less echogenicity than males. Male patients had the most right hyperechogenicity and the most severe left parkinsonism. Male unaffected relatives were significantly more echogenic than controls on that side. On the left, only female patients had significant echogenicity. Our data supports he notion that unaffected relatives of schizophrenic subjects have increased parkinsonism and concomitant brainstem abnormalities which may represent a vulnerability to the disease. Both motor and brainstem abnormalities are asymmetric and influenced by sex.

**NO. 211**

**TOWARDS A GREATER UNDERSTANDING OF HOW TO PROMOTE RECOVERY: A MIXED METHODS STUDY OF PATIENT SATISFACTION WITH CRISIS PSYCHIATRIC SERVICES**

*Lead Author: Summer P. Savon, M.D.*
*Co-Author(s): James Dilley, MD, Christina Mangurian, MD, Emily Martin, MS, Richard Patel, MD, Martha Shumway, PhD*

**SUMMARY:**

Introduction:
Recovery and person-centered care are the central goals of contemporary behavioral health treatment and as such far transcend the historical medical model which had a more narrow focus on minimizing symptoms and returning to premorbid

functioning. Every interaction of a mentally ill individual within the clinical treatment environment constitutes an opportunity to potentially foster greater self-empowerment and progress along the continuum of recovery. Accordingly it is essential to better understand the impact of emergency psychiatric services from the patient's perspective.
Methods:
The Westside Crisis Clinic serves a diverse population about which little is currently known in terms of either attitudes towards care or perceptions of its utility in fostering personal parameters of recovery. This study is designed to investigate the influence of demographic factors, illness/social history and individual perceptions of service satisfaction on our patient population, and to define more clearly how patients' sense of hope and empowerment are impacted by their experience of care at the clinic. Mixed methods (quantitative questionnaires and qualitative interviews) are being used with a representative sample of clinic participants (age range 18-60 yrs, 60:40 male/female, significant Hispanic and Black/African American ethnic origin). The interviews and questionnaires are done in the clinic following service.
The semi-structured interview, conducted by a trained research assistant, asks about response to service delivery, illness history and current social stressors, as well as lifecourse stress exposure. Also, inasmuch as patients have different recovery challenges, open-ended questions will be included so that the influence of cultural/ethnic bias and substance use on patient satisfaction can be determined. A standard instrument, the MHSIP Customer Survey will be used.
Results:
Preliminary results suggest that a range of individuals within this challenging urban population are willing to participate in this survey and, in a supportive, respectful setting are interested in expressing their perceptions of their clinic experience.
Conclusions:
This work will result in a better understanding of how to improve patient satisfaction in a psychiatric crisis environment. The dlalectic between connecting with what is, while also creating room for future change, is ultimately a fluid operational position which providers cannot unilaterally articulate. Incorporation of insights from this work can offer immediate benefits (positive patient perceptions can act as an "environmental placebo") as well as longer term improvement in the individual patient's ability to direct his or her progress in recovery.

**NO. 212**

**A PROSPECTIVE STUDY ON THE CHANGE OF HIPPOCAMPAL VOLUME THROUGH THE OCCURRENCE OF APOE E4 IN EARLY ONSET MILD COGNITIVE IMPAIRMENT (EO MCI)**

*Lead Author: Kim Hui Yeon, M.D.*
*Co-Author(s): Seok Woo Moon, M.D., Ph.D.*

**SUMMARY:**

Objectives: The aim of this study was to examine the relationship between APOE ε4 and the change in the hippocampal volume in early onset MCI (EO MCI).
Methods: This study had 32 subjects in all (13 men, 19 women), all of whom were diagnosed with MCI via CERAD-K. Subjects aged 55-65 years were included in this analysis for EO MCI, and their CDR score was 0.5. APOE genotyping was done in this group. To evaluate the change in the hippocampal volume, volumetric measurements were performed in the right and left hippocampus for two years. The hippocampal-volume measurements were conducted using BrainSuite, and the Pearson correlations between the hippocampal volumes were obtained manually and automatically.
Results: It was found via repeated-measures ANCOVA that there was a significant correlation between APOE ε4 and hippocampal-volume atrophy. Over two years, statistically significant reductions of both the right and left hippocampal volumes were found, and the volume reduction in the right hippocampus was found to be greater than that in the left hippocampus.
Interpretation: In the current study, the longitudinal changes in the bilateral hippocampal volumes over two years through the occurrence of APOE ε4 were examined. The effect was greater in the right than in the left hippocampus, and the changes in the hippocampal volumes were greater in the APOE ε4 positive subjects. These results suggest that the possession of APOE ε4 may lead to greater predilection for right hippocampal atrophy in EO MCI.

**NO. 214**

**EVALUATION OF A MODEL OF INTEGRATED CARE FOR PATIENTS WITH CHRONIC MEDICAL AND PSYCHIATRIC ILLNESS**

*Lead Author: Aghaegbulam H. Uga, M.D.*
*Co-Author(s): Kathy Bottum, M.D., Ph.D., Vineka Heeramun, M.D., Shreedhar Kulkarni, M.D., Trinadha Pilla, M.D.*

**SUMMARY:**

Introduction: Recent studies indicate that more than 68% of persons with mental disorders report having one or more general medical disorders, and 29% of those with medical disorders have a comorbid mental disorder. Patients with chronic mental illness have a life span shortened by as much as 25 years, with 60% of this attributable to untreated chronic medical conditions. Despite these facts, systems of care that treat individuals with serious mental illness are separate from general medical systems of care. The integration of behavioral health and primary care has become increasingly important, with new emphasis on providing care that meets the spirit of the "Triple Aim": improving the experience of care, improving the health of populations, and reducing per capita costs of health care. This study compared the quality of life, satisfaction with care and utilization of care in patients with co-morbid chronic medical and psychiatric illness who are treated by doubly trained internist/psychiatrists at the same location with those who receive care from separate internists and psychiatrists at different locations, with a hypothesis that there is no difference between the two groups.
Methods: Eighty three participants were selected from the integrated medicine and psychiatry clinic (med/psych), and separate internal medicine and psychiatry clinics which are at different locations. Participants from the combined med/psych clinic were cared for by doubly trained internist/psychiatrists while those from the separate clinics received care from an internist and a psychiatrist at different locations. To qualify for the study, participants had to have comorbid chronic medical and psychiatric illness, have been a patient of the clinics for a least one year and be willing to participate by completing the study survey during a clinic visit. The survey included a brief questionnaire of demographic information, including number of medications prescribed, number of ER visits in last year and

number of hospitalizations in the last year, SF12 Quality of Life Questionnaire and Satisfaction with Health Care Questionnaire. Data was analyzed using t-test and chi square test for statistical significance.
Results: Patients attending the integrated clinic reported being more satisfied with the care they received compare to the patients receiving care from separate clinics, when tested by t-test ($p = 0.03$ for satisfaction with medical care and $p = 0.007$ for satisfaction with psychiatric care). There was no difference in healthcare utilization and quality of life.
Discussion/Conclusion: This study demonstrates that integrated care for psychiatric and medical disorders improved the patients' experience of care and therefore may in the long run positively affect the outcome of care. There was no statistically significant difference in quality of life and healthcare utilization.

**NO. 215**

**POLYDIPSIA IN A PATIENT WITH A CHRONIC, SEVERE MENTAL ILLNESS**

*Lead Author: Daniela Volochniouk, B.Sc., M.D.*
*Co-Author(s): Felicia Iftene, M.D.*

**SUMMARY:**

Disturbances of water homeostasis among psychiatric clients have been noticed, particularly the consumption of excessive quantities of liquid ("polydipsia").
Purpose: To describe the particularities of a polydipsic patient with schizoaffective disorder, the risk factors involved, the possible mechanisms, reasons delaying diagnosis, and the screening strategies.
Data collection includes: chart review and structured interviews. We did weight measurements and urine collections twice daily on three different days, at two weeks interval.
The case studied was that of DG, diagnosed with Schizoaffective Disorder 25 years ago. He has been living in a home for special care for 20 years. He has been presenting permanent excessive drinking behavior for the last 15 years, along with episodic aggressive behavior and urine incontinence. He stated that he drinks around 6 liters of water per day.
Possible risk factors involved in triggering DG's water seeking behavior are: treatment with Lithium for the last 20 years, long term classic neuroleptic treatment, and heavily drinking and smoking behavior. The water drinking pattern was interesting - he was waking up at 2 am and drinking large quantities of water to the point that his maximum body weight per day was at 8 in the morning, with a baseline at 8 p.m. He admitted having a psychological reason "dizziness and "feeling high", along with thirst. This patient was only recently diagnosed with polydipsia. In this presentation, we are discussing some potential screening strategies for polydipsia in order to avoid this situation in the future.

AMERICAN PSYCHIATRIC ASSOCIATION

167th Annual Meeting, New York, NY

# INTERNATIONAL POSTER SESSION ABSTRSACTS

**MAY 04, 2014**

**NR3-001**

**PERSONALITY INVENTORY IN EPILEPTIC PATIENTS**

*Lead Author: Daniela Buyatti*
*Co-Author(s): Allegri R M.D.,Amengual A M.D.,Bagnati P M.D.,Campos C M.D., Cohen G. M.D., D Giano C M.D, Doldán, L M.D., Farez, MF M.D.,Harris P M.D. , Martinetto MP M.D., Ugarnes G MD ,Russo G M.D.*

**SUMMARY:**
Background: Bear and Fedio inventory( BFI) is a personality inventory which evaluates 18 traits that were supposed to be characteristic of temporal lobe epilepsy . Specific cognitive impairments has also been described in epilepsy.
Objective: To evaluate discriminative ability of BFI for temporal lobe epilepsy and frontal lobe epilepsy associated to neurocognitive variables
Design/Methods: 53 patients aged 18 years or older ( 23 with FLE and 30 with TLE) matched by age and educational level with 30 healthy controls were studied with Bear Fedio Personality Inventory, Depression Inventory in Epilepsy (NDDI-E), an extensive neuropsychological assessment (Trial Making Tests, digit span, digit-symbol subtest Wais III, Signoret memory battery, Boston naming test, Semantic and phonologic Fluency, Stroop test and Letter-Number Test subtest Wais III).
Results:
In order to find differences between the study groups we evaluated distribution of each variable with Nonparametric statistical test (Kruskal Wallis) Kw resulted statistically significant in all variables. Multiple pairwise comparisons (Dunn) showed that the only variable that differentiated between ET , EF and controls was BFI (p-valor<0.07).In a second model to classify patients in diagnosis groups (TLE,FLE and controls) we built classification trees considering BFI variables along whit cognitive variables as vocabulary , digit span and phonologic fluency .It correctly classified 62 of 77 patients (80.5%).
Conclusions
The BFI differentiates in our sample between TLE, FLE and controls. Also, neuropsychological variables in conjunction with BFI allows us to build classification trees with diagnostic predictive value of 80.5%. According to these results BFI is a valuable clinical tool in characterization of psychiatric symptoms in epileptic patients being also helpful to differentiate patient diagnosis

**NR3-002**

**LEVELS OF C- REACTIVE PROTEIN IN SCHIZOPHRENIA AND BIPOLAR DISORDER: CORRELATION WITH THE DURATION OF ANTIPSYCHOTICS TREATMENT AND METABOLIC SYNDROME**

*Lead Author: Luis G. Herbst, M.D.*
*Co-Author(s): Herbst L2 , Cassanelli M1, Leiderman E3, Goldchluk A2, Saidman N2, Cortesi S2, Wikinski S1,3,4.*

**SUMMARY:**
Schizophrenia and bipolar disorder patients have a higher mortality compared with the general population. One of the main causes of this higher mortality in both diseases is the increase of cardiovascular risk factors, mainly the metabolic parameters. Altered inflammatory markers are also found in both conditions and have been associated with the pathophysiology of both diseases. Among those inflammatory factors, plasma levels of C-Reactive Protein (CRP) are increased.Higher levels of this protein associated with the metabolic syndrome increases cardiovascular risk. The aims of our study were to investigate: 1) whether prolonged treatment with antipsychotics reduces high levels of CRP, 2) if the abnormal levels of CRP correlates with metabolic abnormalities and 3) if metabolic syndrome is associated with high CRP levels increasing cardiovascular risk. Method:We recruited 137 outpatients treated with antipsychotics who were consecutively assisted in the Outpatient Unit. Patients gave their written consent. The diagnosis of schizophrenia and bipolar disorder was done with the MINI Structured Interview. Demographic data:age, sex and education level, treatment schedules received, current medication, doses used, concomitant drugs. Metabolic parameters measured: body weight, height, waist-hip circumference and blood pressure. Once this procedure was completed, participants were assessed the following week with 12 hours of fasting to obtain a blood sample.Biochemical parameters quantified: fasting blood glucose, insulinemia, total cholesterol and HDL, triglycerides, CRP. Results:56.3 % of men and 35.5 % of women had at least three criteria for diagnosis of metabolic syndrome. The average treatment time was 18,5 ± 8,9 years. The values of CRP averaged 4.5 mg/l. 42 % of men and 23.5 % of women had CRP values between 1 y 3 mg/l which means cardiovascular risk, 41.1 % of men and 70.6 % of women showed values higher than 3 which means high cardiovascular risk. The CRP showed no significant correlation with duration of treatment (rs = 0. 18; p =ns). The CRP showed statistical significant correlation with blood glucose (rs = 0.19; p = 0.03) and HDL (rs = -0, 27; p = 0.002) and a trend to significance with triglycerides (rs =0.17; p = 0.05) and systolic pressure (rs =0.17; p = 0.05).Conclusions: All of our sample showed elevated CRP, 83.1 % of the patients presented risk values or high cardiovascular risk. As the duration of treatment with antipsychotics did not change the inflammatory factor, we can rule out a direct effect of antipsychotic drugs on it. However, a considerable number of patients presented high CRP associated with metabolic syndrome factors showing the association between inflammatory factors and a probable higher cardiovascular risk. Future studies should clarify whether the correlation between CRP, HDL and glucose is a characteristic of both psychiatric diseases or is induced by prolonged use of antipsychotics .

**NR3-003**

**THE DEPRESSION RISK ASSESSMENT QUESTIONNAIRE (DRAQ) IN ACUTE CORONARY SYNDROME (ACS).**

*Lead Author: Sean D. Hood, M.B.B.S., M.Sc.*
*Co-Author(s): Joanna Crittenden, B.A., Peter L. Thompson, M.D., M.B.B.S., M.B.A., Patricia Davidson, Ph.D., B.A., R.N.*

**SUMMARY:**
Introduction
Depression is an important comorbid diagnosis in Acute Coronary Syndrome (ACS) that confers an increased risk of mortality, disability and a reduced health related quality of life. Early detection of depression risk maybe helpful in ameliorating the development of depression in ACS patients.
Objectives
This research project aimed to develop a brief depression risk assessment instrument for use by cardiac nurses in the acute clinical setting.

Methods
The Depression Risk Assessment Questionnaire (DRAQ) was developed using a four step approach. 1 Literature were searched for studies identifying risk factors for depression in ACS samples then graded for quality of evidence using the Oxford Centre for Evidence-based Medicine approach. The evidence review provided the basis for the draft DRAQ. 2.Comprehensiveness and content validity of the DRAQ was assessed by a panel of eight experts and items retained or removed using a Content Validity Index score. 3. The refined DRAQ was tested for internal consistency, reliability and temporal stability in a sample of 220 ACS patients admitted to a coronary care unit. 4. Qualitative acceptability of the DRAQ as a clinical assessment was established in a small survey of study participants.
Results
Thirteen risk factors were initially identified as highly relevant to developing depression from the literature. The structure, layout and choice of question type were influenced by the need for a high level of clinical utility. Following assessment of the comprehensiveness and content validity, nine questions were retained.
The internal consistency of the DRAQ was calculated using the Cronbach's coefficient alpha based on raw (0.71) and standardized (0.68) variables. Temporal stability was assessed using the kappa statistic with results indicating 'fair agreement' (0.47) to 'excellent agreement' (1.00). Eleven patient participants reviewed the acceptability of the DRAQ and reported questions were clear, relevant and appropriate.
Conclusion
This project has developed a preliminary tool with acceptable psychometric properties which could be used by nurses to help screen for the potential development of depression amongst ACS patients and then refer to post discharge services. This creates opportunities to explore preventive therapies rather than observing for the onset of depression and then treating the disease.

**NR3-004**
**ASSESSMENT OF SOCIAL AND EMOTIONAL WELL-BEING OF ABORIGINAL PEOPLE IN AUSTRALIA**
*Lead Author: Aleksandar Janca, M.D.*
*Co-Author(s): Zaza Lyons, M.P.H.*

**SUMMARY:**
Background
Aboriginal people suffer from a significant burden of mental health problems which can lead to poor health status and reduced life expectancy. Screening and assessment of Aboriginal social and emotional well-being (SEWB) is a challenging process, in part due to poor training in this area and a lack of suitable tools. Our team have developed a culturally appropriate screening tool that aims to assist in assessing SEWB among Aboriginal people.
Method
The initial phase of HANAA development involved consulting with key informants across Western Australia who work in the field of Aboriginal SEWB. A glossary of terms and concepts relating to SEWB was developed to identify ten key domains. These included mood, suicidality, substance use, functioning and resilience.
The HANAA is implemented by initiating a semi-structured interview that covers each of the domains. The respondent is encouraged to tell their story in the form of a narrative which is recorded by the interviewer. The aim is to determine if there is a problem or not, in each domain. At the end of the interview a 'recommended action' is determined.
Evaluation of the HANAA included exploration of cultural applicability, feasibility, reliability and validity on a sample of 30 Aboriginal participants from urban and rural settings.
Findings
The HANAA was well accepted by study participants and easily implemented. Reliability was good with agreements between Aboriginal and non-Aboriginal interviewers measured by kappa statistics ranging from 0.5 to 1.0. Overall agreement between interviewers on the narratives ranged from 60% - 96%. There was also good agreement between interviewers and treating clinicians in identifying the main SEWB problem and recommended course of action.
Conclusion
The HANAA is a culturally acceptable, valid instrument for the assessment of SEWB among Aboriginal people in Australia. It can also be used as a teaching and training tool for those working with Aboriginal clients. As such, HANAA may be of interest to American, Canadian psychiatrists and other professionals dealing with mental health problems of indigenous populations.

**NR3-005**
**DEVELOPMENT OF A POLYPHARMACY AUDIT TOOL IN AN INPATIENT PSYCHIATRIC UNIT**
*Lead Author: John Lam-Po-Tang, M.B.B.S.*
*Co-Author(s): Lynn Davies, R.N.*

**SUMMARY:**
Co-prescription of more than one antipsychotic medication in individual patients has been demonstrated to be a widespread practice in psychiatric inpatient units, despite limited evidence that antipsychotic polypharmacy produces better outcomes than monotherapy. Polypharmacy has been demonstrated to be associated with a greater risk of side effects.
The authors identified use of antipsychotic polypharmacy in an acute psychiatric inpatient unit, and also identified the lack of a local audit tool to detect and monitor polypharmacy. The development and piloting of a simple audit tool to identify antipsychotic polypharmacy in an inpatient setting is described, and the resultant polypharmacy audit tool will be available for review. Results from ongoing polypharmacy audits from 2009 to 2013 are reported.

**NR3-006**
**HEROIN-ASSISTED TREATMENT SHOWED BETTER EFFICACY THAN METHADONE**
*Lead Author: Marc Ansseau*
*Co-Author(s): Isabelle Demaret, Etienne Quertemont, Géraldine Litran, Cécile Magoga, Clémence Deblire, Nathalie Dubois, Jérôme De Roubaix, André Lemaître*

**SUMMARY:**
BACKGROUND: A fraction of patients receiving methadone treatment pursues their use of street heroin. In Switzerland, a new treatment with prescribed diacetylmorphine (pharmaceutical heroin) was developed to help these heroin addicts resis-

tant to methadone treatment to decrease their street heroin use. In this heroin-assisted treatment (HAT), diacetylmorphine is prescribed to severe heroin user and is administered by patients under the supervision of nurses in a specific centre. Six randomised controlled trials compared HAT to methadone treatment: in Switzerland, The Netherlands, Spain, Germany, Canada and United-Kingdom. HAT showed better efficacy than methadone. Patients used less street heroin, their health improved and their criminal behaviour decreased. A new trial assessed in Belgium the feasibility and efficacy of this treatment compared to methadone treatment.
METHODS: The TADAM (Treatment Assisted by Diacetylmorphine) experiment was an open label randomised controlled trial developed on the Swiss model of HAT developed in 1994. Main inclusion criteria were 5 years of heroin addiction, (almost) daily use of street heroin and a previous attempt of methadone treatment. As in the Dutch experiment, patients could choose to inhale or to inject diacetylmorphine in the new HAT centre. HAT was stopped after 12 months and the best available treatment was offered to the patient. The research team assessed subjects every three months with standardised questionnaires (EuropASI, MAP-HSS, SCL-90-R) and questions on involvement in a criminal milieu. We completed our reported data with toxicological analysis and criminal proceedings. The Ethics Committee of the University of Liège approved this trial on March 16, 2010. Each patient signed the informed consent form approved by the Ethics committee.
RESULTS: 74 subjects were randomised in the trial: 36 in the experimental group and 38 in the control group. According to the primary efficacy criterion, the experimental group counted at least 30% more responders than the control group after 3 months ($p<0.05$), 6 months ($p<0.05$) and 9 months ($p<0.01$). At the 12 month assessment, the number of responders was still higher in the experimental group but the difference (11%) was no more significant ($p=0.35$). At the 12 month assessment, the condition of patients in the experimental group worsened compared to the 9 month assessment. This effect was not seen in the control group were patients could continue their methadone treatment after the 12 months.
CONCLUSION: As in other countries, HAT is an effective treatment for severe heroin addicts resistant to methadone treatment. However, a predetermined duration of 12 month counteracts the efficacy of this treatment.

**NR3-007**

**PARENTAL RISK FACTORS OF PERVASIVE AGGRESSIVE BEHAVIORS IN JUVENILE OFFENDERS WITH SEVERE PSYCHIATRIC DISORDERS**

*Lead Author: Elsa Hoffmann, M.Psy.*
*Co-Author(s): Stephan De Smet, M.D., Gaëlle Grajek, M.Psy., Bruno Piccinin, M.D., Nelson Provost, M.Psy., Anu Raevuori, M.D. Ph.D., Laurent Servais, M.D., Gilles Vandekerckhove*

**SUMMARY:**
Background
In juvenile offenders with severe psychiatric disorders, aggressive interaction model is common with both peers and adults. Almost all of these adolescents grow up in an insecure and violent environment. Thus, studying parental characteristics is crucial for understanding and treating them, as well as for building appropriate prevention programs.
Method
This study was conducted in Brussels, Belgium, in a forensic 14-bedded unit of the C.H.J. Titeca. This unit treats adolescents (aged 15 to 18) with early-onset schizophrenia and/or major affective disorders, who are involved in severe delinquency. We collected retrospective data on parental history of 72 patients. To evaluate aggressive behavior during hospitalization, the Overt Aggression Scale (Yudofsky et al., 1987) was completed from patients' file. As violent behaviors are an inclusion criterion for hospitalization, patients were categorized as overtly aggressive by a high weighted cut-off score of 25 points (range 0-60). To ensure validity, patients who scored between 20 and 30 points were re-evaluated by clinical staff. Of patients, 51 presented pervasive overt aggressive behaviors (A+) during their stay at the unit, while 21 presented less aggressiveness (A).
Results
Without distinguishing A+ and A, high rates of antecedents of violent behaviors in parents (father (f): 65.3%; mother (m): 33.3%), as well as prior criminal charges (f: 31.9%; m: 18.1%), psychiatric disorders (f: 43.1%; m: 62.5%) and substance abuse/dependence (f: 52.8%; m: 30.6%) were observed. A+ patients' mothers presented significantly more substance abuse/dependence (39.2% vs 9.5%; $p=.011$) and psychiatric hospitalizations (37.3% vs 9.5%; $p=.015$), and marginally more criminal charges (23.5% vs 4.8%; $p=.054$) than A patients' mothers. Psychiatric antecedents (47.6% vs 68.6%) and antecedents of pharmacological treatment (38.1% vs 41.2%) were high but not significantly different. When comparing patients' fathers, no significant differences were observed between A+ and A, as prevalence of all these antecedents is high in both groups.
Discussion
Parents of juvenile offenders with severe psychiatric disorders present high frequencies of mental illness and criminal/violent behaviors. Among fathers in both groups (A+ and A), the rates were equally high. This could be explained by frequent parental separations and fathers absence in adolescents' lives. On the contrary, psychiatric hospitalization and substance abuse among mothers, as well as criminal charges, are overrepresented in the A+ group. Insecure environment during early childhood is known to have a major impact on bio-psychological development, and our results suggest that the presence of maternal antisocial characteristics and severe mental illness may lead to extremely high overt aggression in offspring. It emphasizes the importance of prevention programs and the need of child oriented care in mentally ill parents.

**NR3-008**

**WEB-BASED PROGRAMS FOR PSYCHOTROPIC SUBSTANCES: A SYSTEMATIC REVIEW**

*Lead Author: Roseli Boerngen-Lacerda, Ph.D.*
*Co-Author(s): Adriana O. Christoff, M.S., Anabel de Oliveira, Luciana M. dos Santos*

**SUMMARY:**
Several published systematic reviews and one meta-analysis show the efficacy of web-based interventions for substance use. However, efficacy was assessed over a short period of time, targeting different populations, and varying contexts. We hypothesize that other forms of evaluation could provide an integrated view of efficacy and how web-based programs can work in real world settings, thus improving their effectiveness.

Studies published between January 1990 and August 2013 in PubMed and pertinent listservs, were identified using the keywords: e-health, web-based programs, online therapy, and medical internet associated with use of -tobacco, -alcohol, and -drugs of abuse. The inclusion criteria were efficacy, effectiveness, and/or other assessments. Of the 6,786 abstracts identified, 57 articles were selected that address efficacy, effectiveness, and other kinds of evaluation, such as validity, satisfaction level, reliability, acceptability, feasibility, and quality of life. While the selected articles varied in relation to different populations, format, length, number of sessions and therapist involvement, they showed strong evidence that web-based interventions have efficacy in changing drug use behavior both during and after access to the website. However, effectiveness studies were less successful mainly due to usability of the programs as well as the lack of consideration of the participant's stage of behavioral change. Other forms of evaluation suggested ways to improve the low attrition to the web-based programs. We believe it is important to link efficacy studies to other forms of assessment, such as the usability, to increase their effectiveness in the real world.

**NR3-009**

**PREVALENCE AND SOCIODEMOGRAPHIC CORRELATES OF PSYCHOTROPIC DRUG USE IN BRAZIL: RESULTS FROM THE SÃO PAULO MEGACITY MENTAL HEALTH SURVEY**

*Lead Author: Angela M. Campanha, M.Sc.*
*Co-Author(s): Igor André Milhorança, Yuan-Pang Wang, M.D., Ph.D., Maria Carmen Viana, M.D., Ph.D., Laura Helena Andrade, M.D., Ph.D.*

**SUMMARY:**
INTRODUCTION: Mental Disorders are highly prevalent and have been associated with high use of health services and medications. However, studies in several countries have found low prevalence rates of psychotropic drugs among those with 12-month disorders.
OBJECTIVES: To estimate the prevalence of use of psychotropic medication (UPM) in adult general population and among individuals with 12-month DSM-IV mood, and anxiety disorders in São Paulo Metropolitan Area (SPMA), Brazil. HYPOTHESIS: The overall UPM is low in the general population and in those with active disorders. Subgroups more likely to use are women, old cohorts, and with comorbidities.
METHODS: A representative cross-sectional household sample of 2,942 adults was interviewed face-to-face. The WHO Composite International Diagnostic Interview was used to assess psychopathology, disorder severity, and UPM. Respondents were asked about UPM during the previous 12-month. Multiple logistic regression analysis was used to evaluate associations of UPM with sociodemographic correlates and presence of psychopathology.
RESULTS: Only 6.1% respondents reported UPM in the prior year. Multiple logistic regression showed that UPM was more common in women than in men (OR= 2.6; 95% CI=1.6-4.1), increased with age, years of education, and income. Hypnotic and sedatives (3.6%) and antidepressants (3.5%) were the most commonly reported. The percentage of exclusive users was 3.6% and the most frequent drugs combination included the use of antidepressants and hypnotics and sedatives (1.4%). Only 13.6% of those with 12-month disorders reported UPM, being 24.9% among those with mood, and 14.4% in those with anxiety. Respondents without diagnosis also reported UPM (2.9%). UPM increased in the presence of the comorbidity, being higher in individuals with two or more disorders (21%) (OR=2.7; 95% IC=1.8-4.1); p<0.0001). Only 9% of respondent with one disorder had UPM. UPM was higher among respondents serious/moderate disorders (17.3%) dropping to 6.6% among those with mild disorders (p<0.0001). Severe/moderate cases were more likely to UPM, in comparison with mild cases to class of antidepressants (OR=2.0; 95% CI=1.1-3.6; p=0.0243) and mood stabilizers (OR=20.1; 95% CI=2.4-171.3; p=0.006).
DISCUSSION: UPM is low in the SPMA, with prevalence rates lower than found in others surveys with similar methodology in other countries, showing that the population has low access to psychotropic medication.
CONCLUSION: These findings suggest that the majority of individuals diagnosed with any mental disorders are not being treated with psychotropic medication. Public policies should increase access to appropriate care, particularly among subgroups with low socioeconomic status.

**NR3-010**

**PSYCHOTIC AND NON-PSYCHOTIC DEPRESSION: ARE THERE CLINICAL DIFFERENCES THAT CORRELATE WITH PSYCHOTIC SYMPTONS AMONG HOSPITALIZED PATIENTS?**

*Lead Author: Felipe B.P. Costa, M.D.*
*Co-Author(s): Aline Boni, Rafaela W. Baptista, Thomas L.T. Souza, Erika Biegelmeyer, Mariane B. Resta, Bruno P. Mosqueiro, Fernanda L.C. Baeza, M.D., Gabriela L. Nuernberg, M.D., Marcelo P. A. Fleck, M.D., PhD, Neusa S. da Rocha, M.D., PhD*

**SUMMARY:**
Psychotic Depressive Episode is a subtype of Depression with distinct characteristics than the Non-Psychotic form of the disorder. There is increasing evidence that the psychotic features in these patients cannot be explained by depressive symptoms' severity. We aim to evaluate if there are differences in depressive symptoms' intensity between depressive patients with psychotic features and depressive patients without psychotic features, among hospitalized patients.
This is a longitudinal study. We interviewed 258 inpatients with Depressive Episode (108 of them with psychotic features). The patients were hospitalized in the psychiatric ward of a general hospital. We assessed Hamilton-D, CGI, GAF and BPRS , as well as other clinical characteristics, at admission and at discharge. When compared admission and discharge, all clinical variables showed statistically significant improvement in both psychotic and non-psychotic patients. We found no significant differences when the Hamilton-D scores were compared between the two groups, both at admission and at discharge. However, the other 3 scales showed significantly different scores among the two groups, in at least one of the assessment times. GAF mean scores were 27.16 for psychotic patients and 35.70 among non-psychotics at admission (p<0,001); at discharge, mean GAF scores were 60.49 among psychotic patients and 64.14 for non-psychotic patients (p=0.173). The CGI mean scores of the psychotic group was 5.74 for psychotic patients and 5.10 for non-psychotic patients, at admission (p<0,001); and the difference remained statistically significant at discharge, with 3.54 for psychotic patients and 3.11 for non-psychotic patients (p<0,001). The BPRS mean scores also shown statistically

significant differences between the two groups, both at admission (psychotic patients=31.53; non-psychotic patients 19.01, p<0,001) and at discharge (psychotic patients=10.47; non-psychotic patients 7.94, p=0.013).
The mean hospitalization time was greater for psychotic patients; psychotic patients had more previous suicide attempts, and there has been found a strong tendency for the psychotic group to have more previous hospitalizations, however it didn't reach the estimated level of statistical significance. Frequency of Electroconvulsive therapy during hospitalization, age at first diagnosis and sex distribution were not statistically different between the two groups.
Conclusions:
Psychiatric hospitalization is an effective alternative in the treatment of severely depressed patients, since both groups of patients we assessed showed a significant improvement in clinical variables when compared admission with discharge. The analysis between groups showed that psychotic patients had worse scores in clinical parameters and showed a tendency that these patients have worse history of disease. However, the intensity of the depressive symptoms did not correlate with psychotic symptoms.

**NR3-011**
**PREVALENCE AND CLINICAL CORRELATES OF SEPARATION ANXIETY DISORDER IN PATIENTS WITH OBSESSIVE COMPULSIVE DISORDER.**
*Lead Author: Ygor A. Ferrão, M.D., M.Sc., Ph.D.*
*Co-Author(s): Adelar P. Franz, M.D., Nicole McLaughlin, Eurípedes Miguel Filho,M.D.Ph.D., Luciano Rateke,M.D., Maria Conceição do Rosário,M.D.,Ph.D., Albina R. Torres,M.D.,Ph.D.*

**SUMMARY:**
Introduction: The OCD patients that presented with separation anxiety disorder as first diagnosis had higher lifetime frequency of post-traumatic stress disorder, higher scores in the Sexual/Religious dimension, Beck Anxiety and Depression Inventories, highlighting the fact that separation anxiety is a marker of anxiety later in life in OCD patients. Methods: This is a cross-sectional study involving 955 OCD outpatients who participated in the Brazilian Research Consortium on Obsessive-Compulsive Spectrum Disorders (BRC-OCSD). The patients were divided into two groups: OCD with SAD (current or past) (OCD+SAD) and OCD without SAD (OCD).Using the previous analysis, we then compared the OCD+SAD and OCD groups. Variables with in the univariate analysis, respecting multicollinearity and clinical-epidemiologic relevance were included in multiple logistic regression models to determine the factors independently associated with SAD and so, determine possible confounders. Results: In the present study, logistic regression model 1 revealed that the factors most strongly associated with OCD+SAD patients were: 1) having 33,3% more chance of being performing or have been performed psychotherapy than patients with OCD without SAD; 2) having 47.3% more chance to present any kind of sensory phenomena than patients with OCD without SAD. The other variables that remained on model 1, despite the statistical significance, showed adjusted odds ratios not enough to have clinical relevance and to be discussed (the OCD+SAD group has a chance of: 1.7% higher to be younger; 4.0% higher to have earlier obsessions onset; 2.0% higher to have higher scores at the BDI and 3.0% higher to have higher scores at the BAI). Otherwise, logistic regression model 2 revealed that the Axis I psychiatric comorbidities most strongly associated with OCD+SAD patients were: 1) 54.7% higher chance of Major depression; 2) 86.4% higher chance of Panic Disorder; 3) 80.1% higher chance of Posttraumatic stress disorder; 4) 42.0% higher chance of Generalized anxiety disorder; and 5) 2.7 times more likely to have Bulimia. Discussion/Conclusion: Comorbid SAD in primarily diagnosed OCD patients is associated with more severe clinical characteristics, as demonstrated by elevated prevalence of other DSM Axis I comorbidities (especially major depressive disorder and generalized anxiety disorder) and it may collaborate to specific clinical presentation, evinced by the presence of other psychiatric comorbidities (panic disorder, PTSD and bulimia) and the presence of other clinical indicators, such as sensory phenomena. Our results reinforce the need for developing diagnostic efforts to better investigate SAD in OCD patients, since it may bring suffering and turn insufficient the available treatment strategies.

**NR3-012**
**FATHER OF ADOLESCENT GIRLS WITH ANOREXIA NERVOSA AND BULIMIA: A QUALITATIVE STUDY ABOUT THEIR LIFE EVENTS AND EMOTIONAL EXPERIENCES**
*Lead Author: Celso Garcia Jr.*
*Co-Author(s): Flavia M. Seidinger, Ana L. M. Traballi, Egberto R. Turato*

**SUMMARY:**
Introduction: Eating disorders (ED) are severe psychiatric disorders affecting mainly teenage girls and young women. There is evidence that family aspects play important role in the etiology and outcome of ED. Most researches in this field focus on mother. Aspects related to the patients' father have been poorly studied.
Objectives: To understand the emotional experiences and life events of the father of adolescent girls diagnosed with anorexia nervosa or bulimia.
Method: Qualitative in-depth interviews were carried out with men, fathers of adolescent girls in outpatient treatment at the General Hospital of the State University of Campinas, Brazil.
Results: The sample was composed mostly by men who spent their entire childhood in the countryside, working in agriculture since they were a child. All of them had lived with their parents at least until the adolescence period. At the time of the survey most of them were married with patient's mother, living with them daily. Contrary to what clinicians often hear from the mothers of ED patients, subjects were concerned about their daughters' health, wished to see them overcome ED and were well informed about the disorder. They reported that one of the most important events of their lives was their daughter birth. The subjects also reported feeling of powerlessness over ED. They tend to blame the mother for the disorder emergence or maintenance, but recognize some relation between the disorder onset and a certain distance in father-daughter relationship. They also recognize that their angry or aggressive temper might have interfered with family relationships and daughter's health.
Conclusion: The findings may contribute to understand life experiences and emotional characteristics of fathers of ED adolescents and this may help to keep them motivated to the treatment. This understanding can contribute to therapists to

help fathers to regain their ability to care for their daughters, getting close to them again and improving father-daughter relationship.

**NR3-013**

**MOTIVATIONAL INTERVIEWING COMBINED WITH CHESS ACCELERATES IMPROVEMENT IN EXECUTIVE FUNCTIONS IN CRACK/COCAINE DEPENDENT PATIENTS: A ONE-MONTH PROSPECT**

*Lead Author: Priscila D. Goncalves*
*Co-Author(s): Mariella Ometto BSc(Psych), Antoine Bechara, PhD, André Malbergier, MD PhD, Ricardo Amaral, MD PhD, Sergio Nicastri, MD PhD, Paula A Martins, BSc(Psych), Livia Beraldo, MD, Bernardo dos Santos, MS, Daniel Fuentes, PhD, Arthur G. Andrade, MD PhD, Geraldo F. Busatto, MD PhD, Paulo Jannuzzi Cunha, PhD*

**SUMMARY:**
Background: Executive Functions (EF) deficits in Cocaine Dependence (CD) are associated with poor treatment outcome, but studies on EF rehabilitation in CD are scarce and the available data is limited. In addition, psychological interventions show modest effect sizes, and pharmacological approaches have not proven to be effective for CD. Our aim was to examine the effects of Motivational Chess (MC), a model integrating Motivational Interviewing and chess game on EF.
Methods: 37 inpatients, 18-45 years old, with a diagnosis of crack/cocaine dependence were assigned to two groups, intervention group (MC, n = 24), and Active Control (AC) group (cocaine dependents who did not participate in the MC, n = 13). Patients were assessed pre and post intervention using neuropsychological tests (Trail Making Test part B, Stroop Color Word Test part C, Digit Span Backward, Wisconsin Card Sorting Test, Iowa Gambling Task) and an impulsivity self-report scale (Barratt Impulsive Scale- BIS-11) during one month of abstinence monitored by urine toxicology.
Results: The groups (MC and AC) were not significantly different in terms of socio-demographic variables, IQ, and impulsivity at pre intervention assessment. After one month of controlled abstinence, both groups have significantly improved neuropsychological scores on attention, mental flexibility, inhibitory control, abstraction abilities, and decision-making, independently of the type of intervention they were enrolled (p<.01). Additionally, the MC group showed a more significant improvement in working memory, based on a group-by-time effect (p=.01), than those participants enrolled in the AC.
Conclusions: Early abstinence from cocaine was associated with improvement in a variety of attentional and executive domains, while Motivational Chess was associated with a more pronounced improvement, especially in working memory. The data suggest that specific tailored interventions focusing on complex executive processes may accelerate the progress of cognitive therapy along this initial period of abstinence. Our results are promising and demonstrate the feasibility of this new model of intervention with cocaine dependent patients, and perhaps with other addictive disorders. Future studies should investigate the impact of MC on brain functioning, treatment retention, and real life functioning.

**NR3-014**

**LONG-TERM PSYCHOSIS REMISSION WITH WARFARIN THERAPY**

*Lead Author: Silvia Hoirisch-Clapauch, M.D.*
*Co-Author(s): Antonio E. Nardi, M.D., Ph.D., Institute of Psychiatry, Federal University of Rio de Janeiro. National Institute for Translational Medicine (INCT-TM), Brazil.*

**SUMMARY:**
Introdution: Five patients with schizophrenia or schizoaffective disorders on chronic warfarin therapy to treat recurrent deep venous thrombosis attained remission of psychotic symptoms and remain free of psychotropic medication from 2 to 11 years. No patient presented with ischemic brain injury on neuroimaging.
Hypothesis: The model that better explains the reduction of hippocampal volume, commonly seen in patients with schizophrenia and schizoaffective disorders, includes a trigger and a predisposing condition. The trigger is exemplified by illicit drugs or traumatic events that promote release of substances harmful to the neurons, such as glucocorticoids or noradrenalin. Predisposing factors would include inherited or acquired factors that could impair neurogenesis or neuronal plasticity.
Methods: We have searched in PubMed on November 4, 2012 for a protein or proteins that could play a dual role, participating in the anticoagulation-fibrinolytic mechanism and in hippocampal neurogenesis or neuronal plasticity. The Medical Subject Headings hippocampus AND “neuronal plasticity” OR neurogenesis were entered with all components of the coagulation cascade.
Results: The search pointed to a single candidate: tissue-plasminogen activator (tPA). tPA promotes blood clot dissolution and also participates in the processes of neurogenesis and neuronal plasticity, required for brain repair after stress, trauma, stroke or seizures. Warfarin inhibits thrombin activatable fibrinolysis inhibitor (TAFI), a mechanism that increases tPA levels. Of note, all five patients had at least one thrombophilia that causes loss of function of tPA, including prothrombin G20210A polymorphism, hyperhomocysteinemia, fasting hyperinsulinemia and antiphospholipid antibodies, such as a strong lupus anticoagulant. A number of biochemical abnormalities seen in schizophrenics can be related to decreased levels or impaired activity of tPA, including deficient dopamine transmission at D1 receptors in the prefrontal cortex, impaired cleavage of pro brain-derived neurotrophic factor, abnormal N-methyl-D-aspartate receptor-mediated signaling, reduced Akt phosphorylation, and abnormal activation of reelin. As expected, an increased prevalence of both thromboembolic and psychotic events can be seen in circumstances characterized by loss of function of tPA, such as the puerperium, confinement, antiphospholipid antibody syndrome and chronic inflammatory disorders.
Conclusion: Our findings suggest that normalization of plasminogen activator function may induce long-term remission of psychotic symptoms. Randomized controlled studies may help clarify the role of anticoagulation in the treatment of psychosis.

**NR3-015**

**CASE REPORT: CYPROHEPTADINE INDUCED PSYCHOTIC DISORDER**

*Lead Author: Rodrigo M. Machado*
*Co-Author(s): Everton Crivelaro, Rodrigo L. Alberto*

**SUMMARY:**

ERS, 9 years old, sent to CAISM (Center of Integrated Mental Health Care) at Franco da Rocha city, Brazil, presenting visual hallucinations 1 day ago. Previously healthy patient, accompanied by his father, who says that he developed this disorganized behavior, visualizing and playing with imaginary kite, indicating that animals were coming through the window in ambulance transport to the hospital, and at times not recognizing my father. Denies focal neurological abnormalities, traumas, previous seizures and fever. Denies inadvertent ingestion of medications, indicating that no psychotropic drugs in the home, and other home remedies would be out of reach of the patient. Reports that he only makes use, by medical prescription, of "multivitamins" to induce appetite, which could not recall the name, started two days before the appearances of symptoms.
Patient was in good general condition, hydrated, acyanotic, anicteric, afebrile. Clinical and neurological examination presented no changes. He was oriented, bit agitated and had some aggressive moments, saying see objects and animals by the office. Blood count, urinalysis, SGOT, SGPT, BUN, creatinine, CSF analisys without changes. Was performed imaging tests without changes too. His father was also requested clarification regarding which "multivitamins" had been used. It was Cyproheptadine, in use 16mg a day.
With suspected exogenous intoxication, staff contacted the Poison Control Center (CCI) which directed that the symptoms were consistent with poisoning by Cyproheptadine, which diagnosis is based on clinical history and treatment through drug suspension.
The child was admitted to the pediatric ward of the hospital for clinical observation, receiving general ration for age and Risperidone 1mg/day. The patient showed improvement of symptoms and absence of episodes of agitation and visual hallucinations.
Discussion: Cyproheptadine is a first-generation antihistaminic drug with anticholinergic properties and antiserotoninergic. It is commonly used as antiallergic and orexigenic. It has good oral absorption, reaching plasma peask levels in 1 to 3 hours. Its half-life is approximately 8 hours. The most common presentation in Brazil is an oral solution of 4mg/5ml. The proper dosage, according to ANVISA (brazilian regulatory agency) for children between 7 and 14 years is 4mg, 2 or 3 times per day with a maximum daily dose of 16mg.
In toxic doses cyproheptadine has the potential to induce anticholinergic syndrome, that among the symptoms include delusions and visual and auditory hallucinations
The patient intake was 16mg/day, the maximum daily dose recommended for age. It is also known that the absorption and metabolism of medicaments differs according to the age and weight of the patients. These facts together, seem to have contributed to the onset of symptoms in question.
A literature review was made, and only one case of anticholinergic syndrome induced by therapeutic dose was found.

**NR3-016**

**ALCOHOL DEPENDENCE AND CD4 CELL COUNT IN HIV/AIDS PATIENTS**

*Lead Author: Andre Malbergier, M.D., M.P.H., Ph.D.*
*Co-Author(s): Ricardo Abrantes do Amaral, MD, PhD*

**SUMMARY:**

Background
Alcohol and drug use is common among people living with HIV/AIDS. This use has been linked to poor antiretroviral treatment (ART) adherence, low access to care, low health-related quality of life, and impairment of physical and mental health.
Hypotheses
Alcohol dependence is associated with lower CD4 cell count in HIV positive individuals independent of ART adherence.
Methods
This study aimed to assess the impact of alcohol dependence on CD4 cell count among patients on ART. A cross-sectional study was carried out at an HIV treatment center affiliated with the University of São Paulo School of Medicine, Brazil. The instruments used in this research were: Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Alcohol Use Disorders Identification Test (AUDIT), 17-item Hamilton Rating Scale for Depression, and the Simplified Medication Adherence Questionnaire (SMAQ). The most recent CD4 cell count and RNA HIV viral load registered in the last 3 months were assessed. Plasma RNA viral load was described as log10 copies RNA/mL or undetectable (≤40 HIV RNA copies). CD4 cell count was classified as a categorical variable as follows: CD4 cell count > or ≤200 cells/mm3.
Results
Four hundred and thirty-eight HIV-positive patients on ART were interviewed by trained psychiatrists and psychologists. Eighty patients (18.3%) were alcohol abusers, 24 (5.5%) were alcohol dependents and fifty were classified as having harmful alcohol use. Seventy two per cent of the sample were considered adhered to antiretroviral treatment. In bivariate analysis, alcohol dependents were almost seven times more likely to have CD4 cell count < 200/mm3. In the multiple logistic regression, alcohol dependents were 9 times ($p < 0.01$) more likely to have CD4 cell count ≤200/mm3. This association was independent of ART adherence, depression and drug use. Detectable viral load was also significantly and independently associated with CD4 cell count ≤200/mm3 ($p < 0.01$).
Discussion
Based on the potential and independent effect of alcohol dependence on CD4 cell count, health professionals should actively assess this disorder in HIV infected patients. Studies about the behavior of the CD4 cell count after the treatment of alcohol dependence are still missing.

**NR3-017**

**"FROM THE SHADOW," AN ANTI-STIGMA TOOL CREATED BY CLIENTS WITH SEVERE MENTAL DISORDERS**

*Lead Author: Felicia Iftene, M.D.*
*Co-Author(s): Dianne Groll, PHD, Adriana Farcas, OT, Mitra Monir-Abbasil,MD, Barinder Singh,MD, Daniela Volochniouk,MD,*

**SUMMARY:**

Background: This ongoing study is a part of an anti-stigma campaign against all bias views regarding patients suffering from psychiatric disorders.
Goals: to collect and assess opinions of the clients and general population on "From the shadow" newsletter; to evaluate the impact of this instrument on the patients involved in creating it; to help the Community Connection Service to keep some of the patients employed.
Method
The subjects enrolled are clients of the Community Teams-

study group (n=50) and people with no psychiatric history – control group (n=50). "From the Shadow" is a 20 pages newsletter created by 10 high functional clients of Providence Care Mental Health Out-Patient Services and 5 staff members. The 15 members of the Editorial Board, creators of the newsletter have had 2 meeting per week, two months, equivalent of 15 "socio-occupational interventional group". 100 newsletters will be distributed to psychiatric out- patient and non- psychiatric population, age 18-70. Data to be collected include: demographic information, the answers to ATQ Questionnaires and to the 10 item questionnaire regarding the perception on the newsletter. All data will be entered into a spreadsheet developed for this project and then analyzed using SPSS v19. Discussions and Conclusions This study offers a tool in the anti-stigma campaign and an employment for people suffering of mental illnesses. There are positive implications for the clients involved resulting from the validation of their personal abilities.
Key words: Schizophrenia, anti-stigma tool, newsletter

**NR3-018**

**TACTILE PERCEPTION AND TACTILE-BASED SPATIAL WORKING MEMORY IN OBSESSIVE COMPULSIVE DISORDER: A PROMISING NEUROCOGNITIVE ENDOPHENOTYPE**

*Lead Author: Roberto A. Amon, M.D., M.Sc.*
*Co-Author(s): Raul Godoy-Herrera, Ph.D.*

**SUMMARY:**

Background: The Obsessive Compulsive Disorder (OCD) affects 1-2% of the world-wide population and is one of the 10 psychiatric disorders that generate major disability. The aim of the present study is to investigate the tactile and spatial perception, working memory and parietal functions in patients with OCD, and correlate these results with the severity of the clinical disorder.
Methods: Twenty patients with DSM-IV-TR diagnosis of OCD and 20 healthy volunteers matched for age, sex, handedness and education underwent a battery of tactile tasks to explore the tactile perception and the tactile-based spatial working memory, and also The Wisconsin Card Sorting Test (WCST) to evaluate the frontal and prefronfal executive function.
Results: Compared with healthy volunteers, patients with OCD have significantly reduced performance in tactile and spatial perception and also in the tactile and spatial working memory; this was independent of the level of anxiety, depression and frontal performance, and was correlated significantly with higher Yale-Brawn Obsessive Compulsive Scale Score.
Conclusions: From the standpoint of neuroscience this could be explained by the fact that patients with OCD would have an alteration in parietal circuits and their associations with the frontal and temporal circuits. The present research can open a new path to understand the role of these types of neural networks in both the pathophysiology as well as the clinical expression of the disease.
Keywords: obsessive-compulsive disorder, OCD, parietal, endophenotypes, tactile, spatial, memory

**NR3-019**

**THE ASSOCIATION BETWEEN SCHOOL-RELATED FACTORS AND SMOKING AMONGST CHILEAN ADOLESCENTS: A MILTILEVEL STUDY**

*Lead Author: Jorge Gaete, M.D., M.Sc., Ph.D.*
*Co-Author(s): Catalina Ortúzar, MSc.*

**SUMMARY:**

Background. Smoking behavior among adolescents is a major health problem among Chilean adolescents. Even though, there are well known risk factors for adolescent smoking, many of them are measured at individual level. There is increasing evidence showing how contextual variables influence deviant behavior among adolescents. Schools are the natural context where children and adolescents spend most of their time before reaching adulthood. On the one hand, there is some evidence that smoking behavior varies among schools and, on the other hand, it appears that schools have an effect on smoking behavior. However there are no studies exploring theses issues in Chile.
Objectives. The main goal is to determine the effect of school context on smoking behavior among Chilean adolescents. Specifically: (i) To determine the existence of inter-school variation of smoking prevalence among Chilean schools; (ii) To determine the effect of school context, as a whole, on smoking among students; (iii) To determine which school-level variables may explain the school effect on smoking behavior
Methods. The Seventh Chilean School Population National Substance Use Survey, 2007 was used (individual variables), along with the annual School Registry of the Chilean Ministry of Education (school context variables) and the National System of Assessment of Learning Outcomes (school achievement variables). Complete data was obtained from 26,539 students nested in 1,072 schools. Multilevel logistic regression analyses were used to relate the risk of monthly smoking to school context, considering different school variables, with and without adjustment for individual-level risk factors for smoking. Additionally, due to fact that some school context variables were aggregated at school-level from students information, compositional effect analyses were performed, specifically for school bonding and school truancy. The aim of a compositional analysis is to verify the importance of an aggregated variable even after controlling for this variable but at individual level.
Results. Variance between schools was 9% at a significant level, and school context variables explained 42,5%. Taking into account individual-level and school-level variables, significant school context variables were: school bonding, school truancy and school mathematics achievement. Considering that school bonding and school truancy were aggregated variables, composition effect analyses found that adjusting by these variables at individual-level, there was still a significant contextual effect of them.
Conclusions. It appears that school context has a small but significant effect on smoking. Interventions on improving school bonding and reducing school truancy may reduce adolescent smoking. Further research is needed to assess other potential school-level variables not available in this study.

**NR3-020**

**THE EFFICACY AND SAFETY OF QUETIAPINE FUMARATE EXTENDED-RELEASE (XR) IN THE TREATMENT OF CHINESE PATIENTS WITH AN ACUTE SCHIZOPHRENIC EPISODE**

*Lead Author: Huafang Li, M.D., Ph.D.*
*Co-Author(s): Yifeng Shen, M.D.,Ph.D., Gang Wang, M.D., Jianguo Shi, M.D., Cui Ma, M.D., Shiping Xie, M.D., Honggeng Zhang, M.D., Xiaoping Wang, M.D., Keqing Li, M.D., Xiufeng Xu,*

*M.D., Niufan Gu, M.D.*

**SUMMARY:**
Objective: To evaluate the efficacy and safety of quetiapine fumarate extended-release (XR) as mono-therapy, once daily, in the treatment of Chinese patients with an acute episode of schizophrenia.
Methods: This was a 6-week, multicentre, double-blind, double-dummy, active-controlled randomized study. Patients with a diagnosis of schizophrenia according to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) criteria were randomized to receive quetiapine XR once daily (maximal dosage 800mg/d) or chlorpromazine orally twice daily ( maximal dosage 600mg/d) for 6 weeks. Comparison between treatment groups was assessed within mixed-effect model repeated measure (MMRM), and the primary contrasts of interest were the treatment differences between quetiapine extended-release (XR) and chlorpromazine at the end of week 6. If the upper limit of 95% confidence intervals for the difference between quetiapine XR and chlorpromazine was less than 6, non-inferiority would be claimed. The primary outcome was the change from baseline in PANSS total score at the end of treatment (per-protocol set). The safety objectives included monitoring of adverse events (AEs), lab values and ECG. ClinicalTrials.gov Identifier: NCT00882518.
Results: 388 patients were randomized (196 patients to quetiapine XR and 192 to chlorpromazine). 384 patients were included in the full analysis set (194 patients in quetiapine XR group and 190 patients in chlorpromazine group) and the per-protocol set comprised 309 patients (159 patients in quetiapine XR group and 150 patients in chlorpromazine group). Mean dosage was 665.7mg/d for quetiapine XR and and 320.7mg/d for chlorpromazine. Change in PANSS total score from baseline to Day 42 was -33.4 for quetiapine XR and -35.9 for chlorpromazine, with a non-significant treatment difference 95%CI (-0.50, 5.63), P>0.05. Quetiapine XR was generally well tolerated, with 67.3% of patients in the quetiapine XR group and 78.1% in chlorpromazine group reporting AEs. The most frequently reported AEs in the quetiapine XR group were constipation (23.0%), dizziness (14.3%), insomnia (7.1%), and agitation (7.1%), and in chlorpromazine group were EPS (28.1%), constipation (10.9%), insomnia (6.3%), dizziness (14.1%) and agitation (7.8%). Seventeen patients (8.9%) in chlorpromazine group discontinued due to AEs, and two patients reported serious AEs; nine patients (4.6%) in the quetiapine XR group discontinued due to AEs and none reported a serious AE.
Conclusions: The study results show that quetiapine XR monotherapy was not inferior to chlorpromazine and generally well tolerated in the treatment of acute schizophrenia in China.

**NR3-021**
**CLINICAL OUTCOMES IN SCHIZOPHRENIA PATIENTS DURING FIRST YEARS OF DIAGNOSIS, A COHORT STUDY.**

*Lead Author: Juan F. Cano, M.D., M.Sc.*
*Co-Author(s): Rodrigo Cordoba, M.D., Julian Ortegon, M.D., Alexie Vallejo, M.D., Carlos Pedraza, M.D., Ana F. Olarte, Psy.D., M.Sc., Edinnson J. Caceres, N.P.*

**SUMMARY:**
Observational study of a cohort of 50 patients with a recent diagnosis of schizophrenia (within five years of baseline visit), followed up during at least three years and up to five years, with periodic evaluations every three months. No changes were made in therapeutic schemes. This registry has the objective to describe the clinical outcomes in this particular group of patients: relapses, total or partial hospitalizations, days free of symptoms; and to suggest possible factors related to that evolution (treatment prescribed, adherence and satisfaction with treatment, tolerability, substance use) in a naturalistic setting. The diagnosis of schizophrenia was confirmed with M.I.N.I. interview, we employed short instruments in every visit including Clinical Global Impression – CGI, Global Assessment of Functioning – GAF, and Personal and Social Performance Scale – PSP. We also aimed to evaluate the insight of patients about their symptoms with the Schedule of Assessment of Insight Scale – SAI-E.
We present here the first year findings.

**NR3-022**
**ROLE OF PERSONAL AND FAMILY FACTORS IN ALCOHOL AND SUBSTANCE USE AMONG ADOLESCENTS: AN INTERNATIONAL STUDY WITH FOCUS ON DEVELOPING COUNTRIES**

*Lead Author: Tomislav Franic, M.D.*
*Co-Author(s): Atilola Olayinka, MD, FWACP, FMCPsych., Dejan Stevanovic M.D., Ph.D., Yatan Pal Singh Balhara MBBS, MD, DNB, MNAMS, Mohamad Avicenna M.D., PhD., Hasan Kandemir M.D., Ph.D., Rajna Knez M.D., Ph.D., Petar Petrov M.D., Ph.D., Tomislav Franic M.D., Ph.D., Panos Vostanis M.D., Ph.D.*

**SUMMARY:**
Most studies examining adolescent alcohol and substance use or abuse hardly include samples from developing countries. To bridge some gap, the prevalence and associated social correlates of alcohol and substance use and abuse was examined among a cohort of school-going adolescents sampled from seven developing countries. Alcohol and substance abuse was measured using the CRAFFT instrument, independent socio-demographic correlates were determined using regression models. A total of 2,454 adolescents completed the study among which 40.9% reported using either alcohol or at least one other substance during the previous 12 months. This was mostly alcohol (37.8%), followed by marihuana/hashish (8.6%) and other substances (8.1%). Among the adolescents who reported using at least one substance; 45% (18.3% of total sample) had CRAFFT scores indicative of problematic or hazardous substance use. Several personal and family factors were independently associated with use/abuse, and the modifiable nature of these factors calls for appropriate intervention strategies.
Key words: substance abuse, social factors, developing countries, adolescents, mental health

**NR3-023**
**PHARMACOLOGICAL TREATMENT PATTERNS IN PATIENTS WITH MULTIPLE SOMATIC SYMPTOMS.**

*Lead Author: Johanne L. Agger, M.D.*
*Co-Author(s): Andreas Schröder, MD., Ph.D., Lise K. Gormsen, MD., Ph.D., Troels S. Jensen, MD., Ph.D., Dr.Med.Sc .Per K. Fink, MD., Ph.D., Dr.Med.Sc.*

**SUMMARY:**
Background
Multiple somatic symptoms, unexplained or exceeding what is

usually seen in well-defined diseases, are common in clinical practice. Patients with multiple somatic symptoms may be diagnosed with somatic symptom disorder or syndromes such as fibromyalgia or irritable bowel syndrome. The most severely ill of those patients fulfil diagnostic criteria for multi-organ Bodily Distress Syndrome (BDS), a disorder related to centrally mediated pain conditions that encompass the conditions mentioned and is characterized by multiple persistent bodily symptoms not attributable to well-defined disease.
Before an adequate diagnosis is made, patients with multiple somatic symptoms may have suffered many years attempting a variety of different treatments. The pharmacological treatment choice in patients with multiple somatic symptoms is complicated by the many diverse symptoms, the lack of diagnostic clarity and clinical guidelines focusing on specific symptoms rather than on the underlying disorder. Management of these patients may therefore vary substantially among physicians, who focus on different aspects of the illness in their choice of treatment. It is unclear which factors influence treatment choice as is a possible impact of previous treatments on prognosis.
Objective
The aim is to elicit the medication utilization pattern in patients with multiple somatic symptoms 2 years prior to a multi-organ bodily distress syndrome diagnosis. The association of the various pharmacological treatment strategies with patient characteristics is explored, and the prognostic value of medication utilization is evaluated in terms of change in functional level and need of social benefits.
Method
Using the Danish Registry of Medical Product Statistics, data is extracted on 240 participants of two previous randomized controlled trials (clinicaltrials.gov: NCT00132197, NCT00497185). Medication utilization is obtained for the two-year period before patients were diagnosed with multi-organ BDS. Medication utilization patterns are characterized using descriptive statistics. For all patients, the medication utilization is categorized according to stepped care algorithms, for pain eg. The Stepped Care Analgesic Algorithm (Kroenke et al.,Gen Hosp Psychiaty 2009). The association of the medication category with patient characteristics is explored both cross-sectionally and prospectively with focus on the following: 1. Symptom profile, symptom duration and co-morbidity (based on data from medical records and SCAN diagnostic interview), and 2. Health status using SF-36-component scores and national social register of transfer benefits.
Results
Preliminary results will be presented.
Perspective
The current study will demonstrate patterns of pharmacological treatment and their association with clinical outcome in patients with persistent multiple somatic symptoms. It will provide a better understanding of the management of these patients in clinical everyday life.

**NR3-024**

**SICK LEAVE FIVE-YEARS BEFORE WHIPLASH TRAUMA PREDICTS RECOVERY: A PROSPECTIVE COHORT AND REGISTER-BASED S STUDY**

*Lead Author: Tina B. W. Carstensen, Ph.D.*
*Co-Author(s): Per Fink, M.D. Ph.D., Eva Oernboel M.sc., Helge Kasch, M.D., Ph.D., Troels S. Jensen, M.D., Ph.D., Lisbeth Frostholm, M.sc., Ph.D.*

**SUMMARY:**
Background
Around 10-15% of individuals exposed to whiplash trauma develop persistent symptoms resulting in reduced working ability and decreased quality of life, but it is poorly understood why some people do not recover. Various accident and post-accident risk factors have been studied, but little is known about pre-collision risk factors. In particular, the impact of sickness and socioeconomic factors before the accident on future recovery is sparsely explored. The aim of this study was to examine if welfare benefits received within five years before whiplash trauma predict neck pain and negative change in provisional situation one year after the accident.
Methods and Findings
719 patients with acute whiplash trauma consecutively recruited from emergency departments or primary care after car accidents in Denmark completed questionnaires on socio-demographic-, collision-, and health factors immediately after the accident. After 12 months, a visual analogue scale (VAS) on neck pain intensity was completed. 3595 matched controls in the general population were sampled, and national public register data on social benefits and any other welfare payments were obtained for whiplash-exposed and controls from five years prior to the accident to 15 months after.
Whiplash-exposed who had received sickness benefit for more than 12 weeks before the collision had increased odds for negative change in future provisional situation (OR (95% CI) = 3.8 (2.1; 7.1) and future neck pain (OR (95% CI) = 3.4 (2.1; 7.0), controlling for other known risk factors. Whiplash-exposed had weaker attachment to labour market (more weeks of sick leave and unemployment) before the collision compared with controls. Whiplash exposure raised the odds for negative change in provisional situation after the whiplash trauma (OR (95% CI) = 3.1 (2.3; 4.4) compared with controls. There might be selection bias entailing possible lack of representativity in this study.
Conclusions
Sick leave before the accident strongly predicted prolonged recovery following whiplash trauma. Whiplash-exposed had weaker attachment to labour market before the accident compared with the general population. Acute whiplash trauma may trigger pre-existing vulnerabilities increasing the risk of developing whiplash-associated disorders (WAD).

**NR3-025**

**ACCEPTANCE AND COMMITMENT GROUP THERAPY (ACT) IMPROVES HEALTH ANXIETY SYMPTOMS: PRELIMINARY RESULTS FROM A RANDOMIZED, CONTROLLED TRIAL**

*Lead Author: Trine Eilenberg, M.Psy.*
*Co-Author(s): Lisbeth Frostholm, M.Psy, Ph.D., Jens Jensen, MSc, Winfried Rief, M.Psy, Ph.D., Per Fink, M.D., Ph.D., DrMedSc.*

**SUMMARY:**
Introduction: Health anxiety (or hypochondriasis) is a prevalent somatoform disorder, yet rarely diagnosed and treated. Its essential features are exaggerated rumination with intrusive worries about harbouring a serious illness. Severe health anxiety may be persistent and associated with severe psychological and physiological impairment and places a substantial burden

on health services; still, treatment of health anxiety remains sparsely investigated.
Acceptance and Commitment Therapy (ACT) is a third-wave behaviour therapy using acceptance-based strategies to improve functioning. ACT has shown a positive effect in the treatment of mood and anxiety disorders. A pilot study has suggested that ACT group therapy may effectively reduce severe symptoms of health anxiety(1).
The aim of the study is to examine the effect of ACT in groups in patients with severe health anxiety in a randomized, controlled design.
Methods: Patients (n=126) consecutively referred from primary care physicians or hospital departments meeting research criteria for severe health anxiety were block-randomised to either a) ten sessions of ACT in groups or b) a ten-month wait list. Primary outcome was self-rated improvement in illness worry on the Whiteley-7 Index (WI) ten months after randomisation. Secondary outcomes were improvement in emotional distress (SCL-8) and psychological flexibility (AAQ-II) ten months after randomisation, among others. Patients were followed-up by questionnaires at 4, 7 and 10 months after randomisation.
For details see: ClinicalTrials.gov Identifier no: NCT01158430.
Preliminary results: Patients in the ACT group improved significantly more than the wait list control group on the primary outcome of illness worry (unadjusted mean difference 21.3, 95% CI 12.6 to 30, p<0.001).
The ACT group also improved significantly more than the control group on the secondary outcomes.
Conclusions: ACT group therapy seems feasible, acceptable, and effective in treatment of severe health anxiety. Positive treatment results may lead to better quality of life for these patients and may reduce health care costs. The study may promote the introduction of ACT treatment which is not yet widely used in Denmark.
Reference:(1) Eilenberg et. al (2013). Acceptance and Commitment Group Therapy for Health Anxiety – results from a pilot study. J Anxiety Disord 2013 Jun 19;27(5):461-8

**NR3-026**

**A MULTI-CENTRIC STUDY OF NMDA ANTAGONIST MEMANTINE EFFECT COMPARED TO ALPHA 2 AGONISTS IN TREATMENT OF OPIOID DEPENDANT PATIENTS**

*Lead Author: Khaled M. Helmy, M.R.C., P.H.*

**SUMMARY:**

Clinical practice and evidence from previous studies showed that memantine may have an effect in alleviating both objective and subjective opiate withdrawal symptoms.
Objectives
- To test the efficacy of memantine in suppression of opiate withdrawal symptoms.
- To compare the efficacy of memantine to alpha 2 agonists (clonidine or lefoxidine) in suppression of opiate withdrawal symptoms.
- To compare between patient's satisfaction from memantine and alpha 1 agonists in the first week during the tough withdrawal period.
- To compare patient's wellbeing in the first month of the post detox period both in patient's receiving memantine and non-receiving patients.
Settings
Inpatients drug dependent treatment units in 15 private hospitals Egypt.
Subjects in each center 20 opiate dependent patients matched for age, sex, duration of dependence in their detoxification period will be divided into 2 groups.
Group A 10 opiate dependent patients will receive memantine in addition to other ordinary treatment in this period.
Group B 10 opiate dependent patients whom will receive clonidine or lefoxydine in addition to other ordinary treatments in this period.
Every patient will receive 30 mg memantine in 2 divided dosages for 5 days then 20mg in 2 divided dosages for 5 days.
Results will be completed and finalized by February.

**NR3-027**

**TO DISCLOSE OR NOT TO DISCLOSE: ETHICAL IMPLICATIONS ON THE THERAPEUTIC PROCESS IN PARALLEL TO THE CURRENT POLITICAL DISCOURSE IN EGYPT**

*Lead Author: Nahed Khairy, M.D.*
*Co-Author(s): Mohamed Nasreldin, M.D*

**SUMMARY:**

With the current flux state of the political scene in Egypt, the impact on medical practice in general and on psychiatry specifically cannot be overemphasized. An analogous flux is in place and regulatory action is called upon. The hypothesis of this work is that a new dimension of disclosure is required to be added to the list of disclosures and potential areas of conflict of interest, more so in psychiatry than any other medical specialty, although all medical practice abides to the fiduciary contract. This hypothesis is rooted in that the potential harm is intangible in contrast to other specialities where the discrimination based on this disclosure (be that to decline or provide preferential treatment) is immediately measurable and noticeable.
On the other hand, long term impact of having been exposed to the therapy or training under the guidance or service from a physician affiliated to the "other party", may take generations and may not be immediately disentangible. It is the opionion of the researchers that for the good of all, it is the patients right to be given the choice and decide autonomously. At a lesser degree of potential harm, it is also the physician's right to be informed about the affiliation of the patient in order be culturally sensitive but also to allow for honest discourse. For, how trained are we to treat those who are directly responsible for the death of a loved one?
While discrimination, in both forms, is argued against, discernment for the sake of cultural sensitivity, to say the least, is.
The free choice of the patient (and the physician) whether to continue/start with a patient/physician affiliated to the a poltical party or direction that may have had direct and immediate impact on their lives or their loved ones.
This is a research project that attempts to measure the impact of the political discourse on the practice of psychiatry and change in receptiveness in teaching A questionnaire has been devised from the very subjective experiences and the incidents relayed to test the hypothesis. This presentation will consist of two parts: raising the argument of why this disclosure is necessary yet optional (soft law) and presenting interim results of this three staged research (psychiatrists-psychiatric patients, non psychiatrists-non psychiatric patients, and students)
This project is funded exclusively by the researchers who take

the initiative to disclose their political affiliation using all methods including social media.

**NR3-028**

**FROM RESEARCHING TO FACILITATING ADHD CHILDREN'S EMOTION REGULATION ACCORDING TO THE FACE©-PROGRAM (FACILITATING ADJUSTMENT OF COGNITION AND EMOTION)**

*Lead Author: Leon-Patrice Celestin, M.D.*
*Co-Author(s): Smadar Celestin-Westreich, Ph.D.*

**SUMMARY:**

Background: Emotion regulation constitutes a core challenge for children with ADHD. The conceptual underpinnings and practical implications of emotion regulation for ADHD children's well-being yet remain to be fully established, especially given a relative dearth of available empirical studies.

Aims: To advance evidence-based practice regarding ADHD children's emotional functioning drawing on the conceptual and empirical insights of the FACE©-ADHD program (Facilitating Adjustment of Cognition and Emotion) as it has been implemented in Paris, France and in Brussels, Belgium.

Methods: This study investigated outcomes among consecutively referred children with ADHD who participated in the cognitive-emotional training sessions of the FACE©-ADHD program. This structured intervention translates the FACE©-model and its empirical findings into practice by training ADHD children's emotional understanding, flexibility and impulse control on a micro-level, while balancing their contextual risk-resiliency load on a macro-level. Micro-level child and parent outcomes were assessed longitudinally using a quantified cognitive-emotional monitoring diary (FACE©-diary) along with traditional parent and child reports of the child's problem behavior (including Achenbach's Child Behavior Checklists and Youth Self-Reports). Macro-level outcomes included mapping of parenting- and family-related risk-resiliency loads in visual FACE'ograms©.

Results: Participating children with ADHD display nonlinear longitudinal patterns of emotion regulation. ADHD children show important emotional processing variability as captured in the FACE©-diaries, which facilitate identifying cognitive and behavioral correlates of "emotional drop-outs". The FACE'ograms© furthermore evidence parental emotional fluctuations to be critical to ADHD children's emotional progress and to related parenting challenges. ADHD children and their parents overall report pre- versus post-program and follow-up behavioral and experiential improvements.

Conclusions: Children with ADHD appear to benefit from focused emotional training. Ecologically valid and visually appealing monitoring hereby highlights the importance of acknowledging and reinforcing these children's non-linear micro-level progress while alleviating macro-level parental burden.

**NR3-029**

**"FROM BONES TO BRAIN": THE CHANGE IN PERCEPTION OF TRAUMATIZATION AND ITS TREATMENT ANALYZED WITH THE HELP OF THE STAR TREK FRANCHISE**

*Lead Author: Mona Abdel-Hamid*
*Co-Author(s): Marco Grabemann, M.Sc., Melanie Kownatka, Thomas Zwarg, M.D., Hermann Esselmann, PhD., Marco Zimmermann, M.Sc., Christian Mette, M.Sc., Jens Wiltfang, M.D., PhD., Bernhard Kis, M.D., PhD.*

**SUMMARY:**

Introduction:

A characteristic trait of science fiction has always been that topics tabooed at the time of production were transferred to "the future" by which means they could become subject of attention and were open for discussion. Star Trek and its franchise came into being in the late 1960s and have lead to TV and movie productions till date. This franchise can thus be examined amongst other things as to the extent to which societal perception of mental diseases and treatment has changed during the last five decades. Due to international conflicts and wars of the last decade and the hereby caused traumatization of civilians and soldiers, our main interest was to analyze the presentation of symptoms and treatment in the media of the 1960s compared to current times.

Method:

In order to analyze the supposed change in perception of delineated mental phenomena, we evaluated the entire video material with regard to traumatization and its treatment.

Results:

Star Trek episodes of the late 1960s show the strong motivation to wipe out any memory of negative experiences. Star Trek TNG and DS9 were produced in the late 1980s and 1990s and show in detail how traumatization can influence thoughts and actions over a period of time. Treatment is portrayed as well and resembles current cognitive-behavioral approaches.

Conclusion:

On the basis of our analysis of all Star Trek material, we have found a significant societal change in the perception and evaluation of psychological problems. Moreover, they have gradually come to present psychological treatment as an important means to alleviate suffering (see Abdel-Hamid et al., 2013). Now we would like to underline our results, i.e. the change from a critical attitude towards mental diseases to a depathologized point of view with the help of exemplary Star Trek scenes dealing with traumatization.

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**NR3-030**

**FACING DEPRESSION WITH BOTULINUM TOXIN: A RANDOMIZED PLACEBO CONTROLLED TRIAL**

*Lead Author: Tillmann Kruger, M.D.*
*Co-Author(s): M. Axel Wollmer, M.D.*

**SUMMARY:**

Introduction: Positive effects on mood have been observed in subjects who underwent treatment of glabellar frown lines with botulinum toxin. In an open case series depression remitted or improved after such treatment. We initiated a randomized double-blind placebo-controlled study (RCT) in which botulinum toxin injection to the glabellar region as an adjunctive treatment of major depression were assessed (ClinicalTrials.gov, number, NCT00934687).

Methods: Thirty patients were randomly assigned to a verum (onabotulinumtoxinA, n=15) or placebo (saline, n=15) group. The primary end point was change in the 17-item version of the

Hamilton Depression Rating Scale (HAMD17) six weeks after treatment compared to baseline.
Results: Regarding baseline characteristics there were no significant differences between the verum and the placebo group. Throughout the sixteen-week follow-up period there was a significant improvement in depressive symptoms in the verum group compared to the placebo group as measured by the Hamilton Depression Rating Scale ($F=5.76$, $p<0.001$, $\eta 2=0.17$). Six weeks after a single treatment scores of onabotulinumtoxinA recipients were reduced on average by 47.1% and by 9.2% in placebo-treated participants ($F=12.30$, $p=0.002$, $\eta 2=0.31$, $d=1.28$). The effect size was even larger at the end of the study ($d=1.80$) and in females ($d=2.41$). Treatment-dependent clinical improvement was also reflected in the Beck Depression Inventory, and in the Clinical Global Impressions Scale. Additional analysis revealed that the level of agitation (as assessed by the agitation item of the HAMD17) had an overall precision of 78% in predicting response (area under the receiver operating characteristic curve, AUC=0.87).
Conclusions: This study shows that a single treatment of the glabellar region with botulinum toxin can shortly accomplish a strong and sustained alleviation of depression in patients, who did not improve sufficiently on previous medication. It supports the concept, that the facial musculature not only expresses, but also regulates mood states, as explained by the facial feedback theory. These novel findings are about to be replicated by two subsequent RCTs (NCT01556971, NCT01392963).

**NR3-031**

**DEPRESSION AMONG OLDER ADULTS IN DAY CARE CENTERS IN GREECE: AN UNDETECTED DISORDER?**

*Lead Author: Konstantinos Argyropoulos, M.D.*
*Co-Author(s): Argyro Argyropoulou, M.D., Christos Bartsokas, M.D., Philippos Gourzis, M.D., Ph.D., Eleni Jelastopulu, M.D., Ph.D.*

**SUMMARY:**
Introduction
With a rapidly aging society, geriatric depression is emerging as important public health concern. Symptoms like sadness, loss of energy and sleep disorders are prevalent among older adults and affect negatively their quality of life.
Hypothesis
Older adults with depression often seek help in primary care. However, approximately half of all patients are not recognized as having depressive symptoms by their physician. The aim of this study was to estimate the prevalence and probable underdiagnosis of depression in elderly of an urban and semi urban area.
Methods
A cross-sectional study was conducted among the members of four day care centres for older people (KAPI), three in the municipality of Patras, West-Greece and one in the municipality of Tripolis, Peloponnese, Greece. A total of 378 individuals took part in the study, aged >60 years. A questionnaire was developed to collect basic demographic data, including three questions from the European Health Interview Survey, regarding self-reported or by a physician diagnosed depression. Moreover, to all participants the Greek validated version of the Geriatric Depression Scale (GDS-15) was applied, to screen for depressive symptoms. The scores of the GDS were compared to the corresponding answers of the EHIS questions. Statistical analyses were performed using the SPSS v. 17.0.
Results
According to GDS-15, 48.1% of the studied population screened positive for depressive symptoms (38.6 % moderate, 9.5% severe type), while having ever been affected with chronic depression reported 19.0%, of them 12.7% being diagnosed by a medical doctor. In 162 members of KAPI of Patras and in 106 of Tripolis who reported never have been affected by a depression, depressive symptoms were observed in 27.7% and in 44.7%, respectively. In 28 individuals from Patras who reported not to know if they have depression and in 10 from Tripolis, depression was observed in 60.7% and in 90%, respectively, applying the GDS-15.
Conclusions
Except of the high prevalence of depressive symptoms, the present study reveals that a remarkable percentage of the study population is oblivious of having depression, and was never been diagnosed with this condition. The low self-reported percentage of diagnosed depression in contrary to the results obtained by the GDS-15 screening, suggests a substantial under-detection in the specific population group of older people.
Discussion
Depressive symptoms are not a natural part of ageing and with appropriate treatment they are often reversible. Depression seems to be the most under-diagnosed disease in primary health care and especially patients in early stages of the disease are less likely to be detected. Studies have shown, that various interventions, combining enhanced strategies of physicians and patient education, have a positive effect on recognition, management and outcome of the disease.

**NR3-032**

**CONCORDANCE OF PREVALENCE OF COMMON MENTAL DISORDERS IN PATIENTS WITH DIABETES MELLITUS AS PER PHQ AND DIAGNOSIS BY A PSYCHIATRIST**

*Lead Author: Ajit Avasthi, M.D.*
*Co-Author(s): Sandeep Grover, M.D., Anil Bhansali, M.D., D.M., Natasha Kate, M.D., Vineet Kumar, M.D., E Mohan Das, M.D., Sunil Sharma, M.A.*

**SUMMARY:**
Aim: To study the prevalence of common mental disorders in subjects with diabetes mellitus. Methodology: Patients with T2DM attending the Endocrinology Outpatient Clinic were initially asked to fill the Hindi version of the Patient Health Questionnaire (PHQ). All the patients were subsequently evaluated by a qualified psychiatrist (blind to the PRIME-MD PHQ diagnosis) using a semistructured interview for a possible psychiatric diagnosis as per ICD-10 criteria. Results: Study included 280 patients (48.9% males, 51.1% females), with a mean age of 50.5 (SD-9.6) years. Of the 280 patients, 45.4% were found to have a psychiatric diagnosis as per the PHQ, most common diagnostic category being that of Depressive disorders (35.4%). On being evaluated by psychiatrist, 31.4% were found to have psychiatric diagnosis, depressive disorders being the most common. There was high level of concurrence between presence of PRIME-MD PHQ diagnosis and the diagnosis made by psychiatrist (Kappa value -0.693; P<0.001). Conclusion: There is high prevalence of common mental disorders in patients with type -2 diabetes

mellitus. PHQ is a useful and effective screening instrument to evaluate psychiatric morbidity in patients with type -2 diabetes mellitus.

**NR3-033**

**PRESCRIPTION BENZODIAZEPINE ABUSE PRESENTING AS VIOLENT BEHAVIOR AND SEIZURE DISORDER**

*Lead Author: Vishal Chhabra, D.P.M., M.B.B.S., M.D.*
*Co-Author(s): Lakshit Jain, M.B.B.S., Abhishek Rai, M.D.*

**SUMMARY:**
Benzodiazepine abuse is known to cause seizures in acute withdrawal, and serious problems between the user and his/her loved ones. Also, people with substance abuse can go to great lengths to ensure that their habit is hidden from others, leading to frequent misdiagnoses and wrong treatment that may appear as a challenge to the treatment team. We present one such case seen by us.
A 47 year old, Asian, married female with a diagnosis of seizure disorder and chronic headache for 6 years , presented to our clinic with complaints of frequent angry outbursts, leading to verbal and (less commonly) physical fights with her husband. Patient also reported her mood to be labile, feeling happy one day and "hating everything "the other. However no discreet mood episodes could be detected.Patient also complained of headache and difficulty sleeping since many years, which has increased for the past 3-4 years. Pt did report of taking occasional sleeping tablet and pain killers for her symptoms but denied any regular use. On obtaining collateral, her husband stated that the marital discord has been going on for the past 5-6 years. He also stated that patient was showing a gradual decline in daily functioning and social interactions during the same period. Laboratory and imaging results failed to detect any organic disease and psychiatrist was consulted. A provisional diagnosis of mood disorder was made and patient was admitted with the view to start mood stabilizers. During her hospitalization, by sheer coincidence, the treating psychiatrist observed the patient taking possession of a large number of Lorazepam tablets from an unknown person inside the hospital canteen. On confrontation, patient confessed that she has been using "sleeping pills" for the past 10-12 years, with the frequency increasing in the last 5-6 years. All of her medical problems, for which she was seeing multiple specialists, were identified in retrospect to be caused by this prescription drug abuse.
Prescription drug abuse is one of the most commonly used illicit drugs, second only to marijuana in the US [1]. They are easier to access then other street drugs and easier to use in a social setting. As these patients often use multiple doctors and falsify history to gain access to medicine, it is necessary to obtain collateral and prescription history from family members and physicians who treated the patient previously. Benzodiazepine abuse must be kept in mind as a diagnosis in a patient presenting with seizure disorder or mood lability with violent behavior [2]; and urine drug screen must be obtained. Prescription drug abuse is a serious problem, and must be addressed as such.
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**NR3-034**

**IDIOPATHIC PERIODIC CATATONIA: A CASE REPORT**

*Lead Author: Vishal Chhabra, D.P.M., M.B.B.S., M.D.*

**SUMMARY:**
Periodic catatonia is a less commonly encountered, but puzzling diagnosis[1]. Idiopathic periodic catatonia can be a difficult disease for the patient, the family members and the treating psychiatrist. We report one such case seen by us in our clinic.
33 year old Asian, single male presented to our clinic with complaints of mutism, refusal to eat or drink and a complete lack of activity. His family reported multiple episodes of similar presentation over an 8 year period despite regular antipsychotic medications. According to them, every single time the patient will present with similar complaints, causing a hospital admission and will recover on his own during the hospital stay.On his first encounter with us, patient responded well to high dose lorazepam IV and was subsequently discharged. Liver and renal function tests, thyroid hormone panel, EEG, MRI revealed no Organic cause of catatonia. Patient was followed and attempt was made to taper lorazepam doses, following which patient had a relapse and presented again with similar complaints in 6-7 months. An exhaustive history taken for psychiatric symptoms revealed nothing and no family stressors were identified. Patient did not respond to high dose IV lorazepam and decision to start ECT was made. Patient responded at 3rd ECT and further 7 ECTs were given. Patient was again discharged on 12mg oral Lorazepam. After few months, patient complained of sedation during the day and requested decrease in his lorazepam dose. Patients family also did a religious ritual named "Pitr Puja" in order to appease the souls of elders who died heirless, which they thought was affecting the patient. Despite close follow-up, patient had a 3rd relapse after tapering the dose of oral lorazepam. With the high level of stress following the failure of the religious ritual, the morale of family members was severely affected. Patient was admitted to the hospital again, from where the family members sought discharge against medical advice and the patient was lost to follow-up.
Idiopathic periodic catatonia is a disease difficult to tackle, with a pathophysiology not completely understood. Every effort made on our part to diagnose the patient returned with no definitive diagnosis. The patient had no clinical or laboratorial signs of schizophrenia, seizure disorder, renal or hepatic failure or other diseases known to cause catatonia. In recent years, atypical antipsychotics and NMDA antagonist are being tried for this disease as well, albeit with caution [2]. Lastly, Periodic catatonia is a stressful condition for the patient and the family. Effort must be taken to enhance compliance and emotional support must be provided to prevent negative outcomes like the one we saw.
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**NR3-035**

**DISTRESS WITH SYMPTOMS OF DELIRIUM**

*Lead Author: Sandeep Grover, M.D.*
*Co-Author(s): Abhishek Ghosh, M.D., Deepak Ghormode, M.D.*

**SUMMARY:**
Objective: Assessment of the patient's experience of delirium. Methodology: 203 consecutive patients diagnosed with delirium were assessed 24 hours after recovery from delirium, for their experience by using Delirium experience questionnaire. Results: About one-third (35%) of the patients could recollect their experiences during delirium and majority (86%) of them were distressed by the same. The level of distress was moderate in most of the subjects (52.5%). Fear and visual hallucination were the commonest distressing themes recollected. When the patients who could recall their experience of delirium were compared with those who could not recall, it was seen that recall of delirium experience was associated with higher prevalence of perceptual disturbances, language disturbances and higher severity of delirium. Conclusion: Delirium is associated with distress in a significant proportion of patients. As the distress is concordant with the severity of delirium, prevention and early treatment of delirium is expected to reduce the distress and subsequent psychological consequences.

**NR3-036**
**QUALITY OF LIFE IN PATIENTS WITH FUNGAL INFECTION OF NOSE AND PARANASAL SINUSES: A STUDY FROM NORTH INDIA**

*Lead Author: Nitin Gupta, M.D.*
*Co-Author(s): Tanuja Kaushal, M.A., Surinder K Singhal, M.S., Rushi, Ph.D., Jagdish Chander, M.D., B.S. Chavan, M.D.*

**SUMMARY:**
Fungal infections of nose and paranasal sinuses have a protracted course with frequent relapses and recurrences. Quality of life (QOL) of such patients is severely affected; but no such study has been carried out from India. Research in this area is needed as this shall help in management of related psychological issues in the context of a liaison model for ENT disorders in collaboration with Psychiatry. 30 patients were with the diagnosis of fungal infection of nose and paranasal sinus were recruited from those attending the Department of ENT of Government Medical College and Hospital (GMCH), Chandigarh, India as per selection criteria. Cross-sectional assessment was carried out using a socio-demographic sheet, clinical profile sheet, disease specific QOL scale (SNOT-20) and generic QOL scales (WHOQOL-Bref and SF-36) by a Clinical Psychologist and ENT Consultant. Analysis was carried out using the SPSS Statistics version 16. Patients were predominantly males, married, unemployed, educated below matriculation, with an average monthly income > INR 7000, of hindu religion, rural background. The mean age was 37.00 (15.88) years. The mean duration of illness was over 5 years with nearly half the sample presented with a recurrence of illness; the mean duration of illness for the presenting episode was approximately 16 months. Most patients had undergone surgical intervention while 40% had a comorbid illness. The severity of illness (on VAS) was towards the lower range 3.83 (2.65). The mean GHQ score was 2.40 (2.78). Also, the average 'intervention to assessment' time was 4.35 months. Regarding disease specific QOL (as measured using SNOT-20), the mean scores obtained on the various subscales were on the lower side for each sub-scale, with lowest being for "Ear and Facial" and highest for "Rhinological". The total SNOT score was indicative of 'moderate degree of problem'. Additionally, the 5 most commonly reported symptoms were- Need to blow nose, Sneezing, Running nose (all three from "rhinological" sub-scale), Frustrated/restless/irritable (from "psychological" sub-scale), and Cough (undefined item"); the commonest being "need to blow nose" and least common being "cough". Regarding generic QOL, as assessed using WHOQOL-Bref, the sample had overall moderate QOL and also in all domains. On the other hand, on the SF-36, highest scores were obtained on the individual domains of 'Physical functioning' and 'Pain' with lowest scores on the domains of 'General health' and 'Role limitation due to Physical health'. Overall, all the domains had scores which indicated that the limitation experienced in various domains was ranging from mild to moderate. Hence, it can be concluded that Indian patients with fungal rhinosinusitis report moderate degree of QOL on both disease specific (SNOT-20) and generic (WHOQOL-Bref) scales with mild to moderate limitation (SF-36).

**NR3-037**
**RESIDUAL SUBSYNDROMAL SYMPTOMS INFLUENCING RECOVERY IN BIPOLAR DISORDER**

*Lead Author: Laura Bernabei, Ph.D., Psy.D.*
*Co-Author(s): Delle Chiaie R, M.D., Ph.D., Borrelli L, M.A., Chiappella L, M.A., Maietta C, M.A., Pancheri C, M.D., Corrado A, M.D., Minichino A, M.D., Bersani FS,M.D., Biondi M., M.D., Ph.D.*

**SUMMARY:**
INTRODUCTION
Recovery in Bipolar Didordes (BD) patients may be considered a bidimensional process in which we may distinguish "clinical" and "personal" recoveries. On one hand, the first type may be strictly considered as a syndromal recovery that is identified on the basis of clinical judgement and in presence of low scores on rating scales for depression and mania, and recovery of functioning. On the other hand, the second type involves a functional recovery, for which patients regain individual premorbid levels of residential, psychosocial and occupational status and in perception of their health. In BD some factors may facilitate or hinder functional recovery, particularly in patients on symptomatic recovery. The aim of this study was to improve our knowledge on the mechanisms that may influence the recovery process in BD patients, trying to identify those factors that may condition a failure to achieve a full recovery in patients with different age of onset.
METHODS
We enrolled 48 consecutive male or female BD outpatients from the outpatient facilities of the Departement of Neurology and Psychiatry of "La Sapienza" University of Rome (age range 21-59; diagnosis of BD1 or BD2 based on the SCID Interview for DSM-IV TR; IQ >70). All patients were euthymic (Hamilton Depression Scale<8 and Young Mania Rating Scale<6) and under stabilized pharmacological treatment and had not been hospitalized within the last six months. They had no history of drug/alcohol abuse present or past and were not affected by neurological diseases or other medical major conditions. All patients completed questionnaires and interviews for the assessment of social functioning (LSP), perception of health (SF-36) and for the detection of subsyndromal syntoms (SCL-90R).

RESULTS
Forty-eight patients with BD were evaluated. On the basis of the age at onset the sample was stratified in 3 sub-groups: 19 patients early onset; 18 patients intermediate onset; 11 patients late onset. On the whole, assessments showed that these euthimic BD patients had impaired perfomances across several domains of psychosocial functioning. Subsyndromal symptoms were found associated with an increased loss of social functioning and different outcomes were found also within subgroups of BD patients with different age of onset.
DISCUSSION
These results may improve our knowledge of the mechanisms underlaying the recovery process in BD, supporting the existence of a strong association between symptomatic recovery and functional recovery in these patients. Since we reported that symptomatic recoveries do not always lead directly to functional recovery but may significantly influence it, this suggests to consider these variables in clinical practice to tailor interventions for these patients in order to favours the achievement of global recovery.

**NR3-038**
**A MULTIDISCIPLINARY APPROACH FOR ADDICTION TREATMENT IN AN ITALIAN DAY HOSPITAL SERVICE: A THERAPY MODEL AND ITS GOALS**
*Lead Author: Stefania chiappini*
*Co-Author(s): Testa R, Di Paolo M, Pettorruso M, Grandinetti P, De Angelis A, Hatzigiakoumis DS, Tascone E, Conte G.*

**SUMMARY:**
Introduction
Nowadays the treatment of addictions is a challenging task because of the emerging of new addictive substances, the expansion of new behavioural types of addiction (such as Pathological Gambling, Sexual addiction, and Internet addiction) and the increasing number of people facing them. Over recent years, the bio psycho social model has recognized drug dependence as a multifaceted problem requiring the expertise of many disciplines.
Typically, in a multidisciplinary approach to therapy, while a pharmacological treatment aims to cure eventual intoxication or withdrawal symptoms, instead a psychological treatment targets cognitive distortions, craving states, and poor coping strategies. Multidisciplinary teams including medical doctors, psychiatrists, psychologists, counselors and nurses can respond best to needs of patients, also due to the multi-factorial nature of dependence.
Methods
In our service (Day Hospital Psychiatry Service of "A. Gemelli" General Hospital) access patients with addictions, both drug and behavioural addiction. At the admission patients undergo a psychiatric interview and assessment tests (Structured Clinical Interview for DSM-IV Axis II Disorders or SCID; Minnesota Multiphasic Personality Inventory or MMPI; and Addiction Severity Index or ASI) in order to diagnose also other mental problems, such as mood disorders, personality disorders, psychotic disorders, or eating disorders, co-occurring with the addiction (double diagnosis).
According to the type of addiction and individual characteristics of patients, treatment could be one or both of the following: a pharmacological treatment (in oral administration and, if necessary, in Intravenous administration) during the drug suspension and detoxification, that aims to cure psychiatric symptoms and physical conditions related to substance intoxication/withdrawal; a psychological treatment through Cognitive Behavioural Therapy or group therapy (inspired by Minnesota Model of addiction treatment) with the objective of reinforcing individual motivation pathways and maintaining the abstinence from gambling or substances. Patients are periodically monitored through psychiatric follow up interviews and toxicological test screens, as required to respond to the patient's changing situation.
Discussion
Although this model followed the study of reference literature, it is not working for a sufficient time to provide statistically significant data related to patients' healing (which will be evaluated trough the number of relapses, psychiatric interviews and psychological testing). Therefore, further studies are needed to confirm the validity of this model.

**NR3-039**
**RELIABILITY AND VALIDITY OF JAPANESE VERSION OF TEMPERAMENT AND PERSONALITY QUESTIONNAIRE FOR PATIENTS WITH MAJOR DEPRESSIVE DISORDER**
*Lead Author: Yuka Kudo, M.D.*
*Co-Author(s): Atsuo Nakagawa, M.D., Ph.D., Masaru Mimura, M.D., Ph.D.*

**SUMMARY:**
Back ground
Gordon Parker et al developed a refined measure of eight personality traits or constructs observed in those who develop depression. They reported the psychometric properties derived from the self-report Temperament and Personality Questionnaire (T&P). The purpose of the present study was to evaluate the validity and reliability of the Japanese version of the Temperament and Personality Questionnaire (J-T&P) for patients with major depressive disorder (MDD).
Methods
T&P was translated into Japanese and the back-translation was confirmed to be congruent with the original version by the developers of T&P. We studied 102 outpatients and inpatients with DSM-IV MDD in Gunma Hospital, a psychiatric hospital in Japan. The mean age of patients was 46 years (range 24-65 years) and 44.1% were female. They completed the J-T&P and the 16-item self-rated Quick Inventory Depression Symptomatology (QIDS-SR). Twenty-one patients completed the questionnaires twice with the mean interval of 12 days (range 2-21 days) to assess its test-retest reliability. In order to determine concurrent validity of the J-T&P, psychiatrists in charge evaluated each patient on the basis of eight T&P personality constructs (1. Anxious worrying, 2. Perfectionism, 3.Personal Reserve, 4. Irritability, 5. Social Avoidance, 6. Rejection Sensitivity, 7. Self-criticism, 8.Self-focus) using a 4-point scale. The test-retest reliability was analyzed by intra-class correlations (ICCs). The concurrent validity was evaluated by Pearson correlation coefficient. The impact of depressed mood on J-T&P scale scores was assessed via Pearson correlation coefficients between J-T&P scale scores and QIDS-SR scores.
Results
The test-retest ICCs among eight constructs were 0.69-0.90 suggesting adequate-excellent reliability. For concurrent valid-

ity, 'Anxious Worrying', 'Perfectionism', 'Irritability', 'Social Avoidance' showed adequate level of validity (r=0.26-0.36). However for other four constructs, the correlation was relatively weak. In consistent with original version of T&P, significant associations between depression severity and J-T&P scores were found for 'Anxious Worrying', 'Rejection Sensitivity' and 'Self-criticism', suggesting that these T&P scales may be more sensitive to depression mood.
Conclusion
The questionnaire showed high test-retest reliability, adequate level of concurrent validity and minimal sensitivity to mood state effects. We conclude that J-T&P is an acceptable instrument for assessing the temperament and personality of patients with MDD.

**NR3-040**
**THE EFFECTS OF MATERNAL DEPRESSION ON CHILD MENTAL HEALTH PROBLEMS BASED ON CHILD GENDER**
*Lead Author: Hyewon Baek, M.D.*
*Co-Author(s): Yun-Mi Shin, M.D.*

**SUMMARY:**
Objective: Depression is a common disorder among women with young children. Compared to non-depressed mothers, depressed mothers tend to display less positive affection, provide less emotional support, and inconsistently respond to their child's every day and emotional needs . We examined the association between maternal depression and child mental health problems according to the child's gender.
Methods: This study was conducted on subjects ranging from 8 to 13 years old and data was collected by a questionnaire that included the Beck Depression Inventory (BDI) and the Korean Child Behavior Checklist (K-CBCL).
Results: Out of the 4,012 children that were approached, 3,911 completed the study. There were no significant differences in gender or schools between the study participants and non-participants. The group of children included 1,970 boys (50.4%) and 1,941 girls(49.6%). Most of the CBCL scores were higher for children in the depressed mother group. The two-way ANOVAs found girls to have significantly higher scores than boys on somatization in the depressed mother group.
Discussion: The issue of differential effects of maternal depression by child gender is of special importance because during adolescence, the sex ratio of clinical depression for girls and boys changes from 1:1 to approximately 2:1. Children suffering from emotional disorders may also experience somatic symptoms which warrants close observation.

**NR3-041**
**THE EFFECTS OF LOW BLOOD LEAD LEVELS ON SYMPTOMS OF ATTENTION DEFICIT HYPERACTIVITY DISORDER**
*Lead Author: Young Rong Bang, M.D.*
*Co-Author(s): Yoon Jeong Heo, M.D., Sung Hwan Kim, M.D., Ph.D., Jae Hong Park, M.D., Ph.D.*

**SUMMARY:**
OBJECTIVE: Lead (Pb) is harmful to child neurodevelopment. However, there has been controversy whether low blood Pb levels contributes to symptom of attention deficit hyperactivity disorder (ADHD). The aim of this study was to investigate the association between blood Pb levels and ADHD in school-aged children (7-15 years).
METHODS: We carried out a case-control study with 116 currently diagnosed ADHD cases and 202 controls from a psychiatric clinic and a general population in Busan, Korea. The participants were matched on age and sex. All children performed visual Continuous Performance Test (CPT) and their parents completed ADHD-Rating Scales (ARS). Whole blood Pb of the participants was measured by the hydride generation method with an atomic absorption spectrometer. The Pb concentrations were log10 transformed to achieve a normal distribution.
RESULTS: Mean blood Pb concentrations were significantly higher in ADHD cases than controls (1.72 vs. 1.30$\mu g/d\ell$, $p<0.001$). After adjusting for potential confounders, logistic regression analysis revealed that Pb concentration (4th quartile, $\geq 2.19\mu g/d\ell$) was associated with higher risk of ADHD (OR=3.67; 95%CI=1.42-9.44, $p<0.05$). We also found significant difference between the low ($<2.19\mu g/d\ell$) and high ($\geq 2.19\mu g/d\ell$) Pb groups with regard to ARS scores (inattention and impulsivity) and CPT performance (omission errors, commission errors, reaction time and reaction time variability).
CONCLUSION: Very low levels of blood Pb may be associated with diagnoses of ADHD in school-aged children. Further investigations with longitudinal data are needed to confirm these results.

**NR3-042**
**NO ASSOCIATION BETWEEN ATTENTION DEFICIT HYPERACTIVITY DISORDER AND SERUM GROWTH PARAMETERS**
*Lead Author: Yoon Jeong Heo, M.D.*
*Co-Author(s): Young Rong Bang, M.D., Sung Hwan Kim, M.D., Ph.D., Byeong Moo Choe, M.D., Ph.D., Jae Hong Park, M.D., Ph.D.*

**SUMMARY:**
Objectives: There is debate about relation of attention deficit hyperactivity disorder (ADHD) with growth dysregulation. However, few study investigated serum growth marker in children with ADHD. The objective of this study was to investigate whether ADHD are related to dysregulation of serum growth parameters in school-aged children (7-12 years).
Methods: We conducted case-control study. The participants were matched with age and gender. Growth differences in physical and laboratory parameters were examined in children with 107 ADHD and 205 controls. Physical parameters include height, weight, head circumference, and bone age. Laboratory parameters include serum Insulin-like Growth Factor 1 (IGF 1), thyroid stimulating hormone (TSH), and thyroxine (free T4).
Results: Age, gender and physical growth parameters were not different in cases and controls. There was no difference of serum IGF 1, TSH, and free T4 levels in ADHD children relative to controls. Also, concentrations of these serum markers were within normal range in both groups.
Conclusion: The presence of ADHD may not disturb serum growth markers in school-aged children. Further research is required to exam whether stimulant treatment affect serum growth parameters.

**NR3-043**
**SUICIDE IN CANCER PATIENTS WITHIN THE FIRST YEAR OF DIAGNOSIS**
*Lead Author: Jinpyo Hong, M.D.*

*Co-Author(s): Myung H. Ahn, M.D., Subin Park, M.D., Hochang B Lee, M.D., Riji Na, M.D., Seon Ok Kim, Jung E. Kim, M.D., Shin K. Yoon, M.D.*

**SUMMARY:**
Purpose: A diagnosis of cancer is associated with an increased suicide risk, and this risk is the highest within the first year of diagnosis. The aim of the present study was to determine risk factors of suicide occurring within the first year of cancer diagnosis (early suicide).
Patients and Methods: A case-control analysis was conducted in order to identify factors associated with early suicide. The sampling pool consisted of 164,497 cancer patients admitted to a general hospital in Seoul, South Korea from 1996 to 2009. We conducted 1:2 matched case-control study by matching 373 patients who died from suicide (cases) with 746 patients who did not die from suicide (controls) on age, sex, anatomic site and at the time of diagnosis. Data were analyzed by using the Cox proportional hazards regression model.
Results: Suicide within the first year after a cancer diagnosis occurred in 149 patients (40.0% of 373 total suicides). The SMR for early suicide was 1.65 [95% confidence interval (CI)=1.40–1.94], and was significantly higher for biliary-pancreatic (SMR=3.07; 95% CI=2.02–4.46), lung (SMR=1.94; 95% CI=1.19–3.30) and stomach (SMR=1.71; 95% CI=1.16–2.42) cancers than for other cancers. The early and late suicide were significantly different in anatomic site (p=0.01) and stage (p<0.001), while not significant in other demographic factors. Advanced stage was more frequent among early suicide (53.4% versus 18.7%; p <0.001). Stage of cancer was independently associated with early suicide risk.
Conclusion: Cancers with an advanced stage at diagnosis were associated with an increased risk of suicide within 1 year of diagnosis.

**NR3-044**
**CROSS-NATIONAL COMPARISON OF TRENDS IN SUICIDE METHODS AND RATES AMONG OLDER ADULTS: SOUTH KOREA AND THE UNITED STATES**

*Lead Author: Jinpyo Hong, M.D.*
*Co-Author(s): Subin Park, M.D., Hochang B Lee, M.D., Su Y Lee, Ph.D., Myung H Ahn, M.D.*

**SUMMARY:**
Background: Lethality of the chosen method during a suicide attempt is a strong risk factor for completion of suicide. We examined whether annual changes in the pattern of suicide methods is related to annual changes in suicide rates among older adultsin South Korea and the United States.
Methods:We analyzed annual data on rates and methods of suicide from 2000 to 2011 in South Korea, and from 2000 to 2010 in the United States. Data on suicide methods were obtained from the World Health Organization (WHO) mortality database.
Results: For both Korean male and female older adults, there was a significant positive correlation between suicide rate, and the rate of hanging (r = 0.76, P = 0.004 for males and r = 0.85, P = 0.001 for females), and a negative correlation between suicide rate and the rate of poisoning (r = −0.67, P = 0.017 for males and r = −0.87, P< 0.001 for females). Among older adults in the U.S., annual changes in the suicide rate and the pattern of suicide methods were less conspicuous, and no correlation was found between them.
Conclusions: The results of the present study suggest that the increasing use of lethal suicide methods has contributed to the rise in suicide rates among older adults in South Korea. Targeted efforts to reduce the social acceptability and accessibility of lethal suicide methods along with the use of evidence-based clinical and social interventions might lead to lower suicide rate among older adults in South Korea.

**NR3-045**
**SHORT-TERM RESPONSE OF SERUM BRAIN-DERIVED NEUROTROPHIC FACTOR TO REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION IN PATIENTS WITH CHRONIC SCHIZOPHRENIA**

*Lead Author: Tae-Young Hwang, LL.B., M.D., M.P.H.*

**SUMMARY:**
Objective: The aim of this study is to investigate the pattern of neuroplasticity and therapeutic implication in patients with chronic schizophrenia, through the response of serum Brain-Derived Neurotrophic Factor (sBDNF) to the quantified stimuli applied with repetitive Transcranial Magnetic Stimulation (rTMS).
Methods: Right-handed twenty inpatients, with chronic schizophrenia, on stable medication whose minimum duration of illness was 10 years were recruited. The handedness was assessed using Edinburgh Handedness Inventory. Consecutive 10 weekday sessions with 20 Hz rTMS (a total of 20,000 stimuli) were applied over the left dorsolateral prefrontal cortex at 100% of motor threshold. There was no change in the medication for at least 2 week before enrollment and 4 weeks thereafter. Serum Prolactin level was co-measured for the reference of stable medication. Primary outcome measure was the change in the mean concentration of duplicated sBDNF(pg/ml). Clinical severity or change was measured using the Clinical Global Impression scale (CGI) and the Positive and Negative Symptom Scale (PANSS).
Results: Eighteen participants (male, 10; female, 8) completed the study and were analyzed. The mean(SD) of chlorpromazine equivalent (CPZE) of antipsychotics were 1,325.69(761.58)mg. The mean(SD) of baseline CGI-severity and total PANSS score were 4.61(0.50) and 68.44(6.05), respectively.
The differences from baseline, in the level of sBDNF, just after the completion of rTMS sessions, were statistically significant (paired t-test: t = 2.245, df =17, p = 0.038). At 2 weeks after the completion of rTMS sessions, however, the significance in the level of sBDNF was not manifest (t = 1.381, df = 17, p = 0.185). Furthermore, there were no significant differences between the levels of serum Prolactin at each point.
Conclusion: The findings of this study showed that, despite the restriction of neuroplastic capacity, continuous therapeutic stimuli may induce neuroplastic change in patients with chronic schizophrenia. However, the absence of maintenance or cumulative effect might suggest negative implications for psychiatric rehabilitation.

**NR3-046**
**LINKING CLINICAL CHARACTERISTICS WITH HEALTH-RELATED QUALITY OF LIFE IN DEPRESSIVE PATIENTS.**

*Lead Author: Bong-Hee Jeon, M.D., Co-Author(s): Moon-Doo Kim, M.D., Ph.D., Joon-Hyuk Park, M.D., Ph.D., Young-Sook*

*Kwak, M.D., Ph.D., Chang-In Lee, M.D., Ph.D., Young-Eun Jung, M.D.*

**SUMMARY:**
Purpose : A number of studies suggest that depression is associated with significant disability and
a poorer health-related quality of life (HRQOL). We aimed to assess HRQOL in Korean patients
with depression and explore factors (socio-demographic characteristics and clinical features)
associated with HRQOL.
Methods : We obtained data from 808 depressive patients who entered the Clinical Research
Center for Depression (CRESCEND) study and evaluated the relationship between HRQOL and
personal socio-demographics, and various clinical features, including depressive severity. We
assessed HRQOL using the 26-item abbreviated version of the World Health Organization Quality
of Life (WHOQOL-BREF) instrument.
Results : Decrements in patients' physical health, psychological health, social relationships, and
environment domains of HRQOL were all strongly associated with greater depressive symptom
severity. Some socio-demographic factors, such as age, marital status, monthly household
income, and religious practice, were associated with HRQOL.
Conclusion : Socio-demographically-disadvantaged patients with greater depressive symptom
severity are at risk of poor HRQOL. We suggest that clinicians treating patients with depression
should carefully monitor the specific HRQOL deficits and consider a more comprehensive approach
to improve such deficits.
Keywords: Depression, Subjective quality of life, Korean, WHOQOL-BREF

**NR3-047**

**VERY COMMON IN CADASIL PATIENTS : DEPRESSIVE DISORDER, COGNITIVE IMPAIRMENT, AND DECREASED QUALITY OF LIFE**

*Lead Author: Bong-Hee Jeon, M.D., Co-Author(s): Jung Seok Lee, M.D., Young-Sook Kwak, M.D., Ph.D., Joon-Hyuk Park, M.D., Ph.D., Young-Eun Jung, M.D.*

**SUMMARY:**
BACKGOUND : Cerebral autosomal dominant arteriopathy with subcortical infarcts and
leukoencephalopathy (CADASIL) is a single-gene disorder of the cerebral small blood vessels caused by mutations in the Notch3 gene. The main clinical manifestations are recurrent stroke, transient ischemic accident, migraine, psychiatric symptoms, and progressive cognitive impairment. Although recognized as a cardinal feature of the disease, psychiatric disturbances have rarely been the object of focused studies.
METHODS: 53 patients with CADASIL (34 men, 64.2%) were assessed by psychiatrists using the
Mini-International Neuropsychiatric Interview (M.I.N.I.), MMSE-KC and Medical Outcome Study Short Form 36(SF-36). Current mood disorder symptoms were assessed using the Hamilton Rating
Scale for Depression (HRSD), the Center for Epidemiologic Studies Depression Scale (CES-D), and the Geriatric depression scale (GDS-K).
RESULTS: Mean age of participants was 61.65±11.41 years old and most of them had R544C
heterotype(71.7%) in genotyping. Among the first presenting symptoms and signs of subjects with CADASIL, the most frequent one was stroke (35.8%), and the next one was migraine (22.6%).
28.3% of them was complaining of subjective cognitive and 17.0% was suffering from mood
Disturbance (17.0%). Mean score of MMSE-KC was 23.04±4.86 and Z score of MMSE-KC was
-1.91±2.23. Frequency of major depressive disorder was 15.1% among the subjects with
CADASIL. In aspects of quality of life, Physical component summary score of SF-36 was
44.69±9.92, Mental component summary score of SF-36 was 48.23±7.75.
CONCLUSION: Depressive disorder was common among patients of CADASIL and they also showed cognitive dysfunction and poor quality of life, compaired to general populations.
KEYWORDS: Cerebral autosomal dominant arteriopathy with subcortical infarcts and
leukoencephalopathy(CADASIL), Neuropsychiatric symptoms, Depression, Quality of life

**NR3-048**

**CLINICAL CHARACTERISTICS OF VASCULAR DEPRESSION IN ELDERLY KOREAN PEOPLE**

*Lead Author: Tae-Youn Jun*
*Co-Author(s): Hyu Jung Huh, M.D., Changtea hahn, M.D., Wang Youn Won, M.D., Seung Chul Hong, M.D., Chang Uk Lee, M.D., Hyun-Kook Lim, M.D.*

**SUMMARY:**
Objectives; This study was done in Korean elderly people in order to examine the relationship of white matter hyperintensity with clinical neuropsychological function and depression symptom severity.
Methods; A total of 148 subjects diagnosed first major depressive episode after age of 60 years were included. Brain magnetic resonance imaging scan was rated with the modified Fazekas White Matter Rating Scale by researcher blinded to clinical information. Cognitive function was evaluated with a comprehensive neurological battery and depression severity was assessed by Hamilton Depression Scale. Subjects were divided into vascular depression group and non vascular group according to the degree of white matter hyperintensity. Independent t-test was used to compare clinical difference between two groups and correlation analysis was used to identify whether white matter hyperintensity severity is correlated with neuropsychological function and depressive symptom.
Results; Vascular depression group was significantly poorer performance in verbal fluency, Boston naming test, Mini-Mental State Examination, trail making test B and stroop test ($p<0.05$). Furthermore, trail making test B and stroop test performance was correlated with white matter hyperintensity severity. However, Hamilton Depression Scale score was not significantly different between two groups.
Conclusion; Several findings from our study suggest that white

matter hyperintensity is associated wtih neuropsychological performance, especially executive function. Moreover, executive dysfunction might contribute to poor treatment outcome of vascular dperession group.

**NR3-049**

**ASSOCIATION BETWEEN FAT GENE AND SCHIZOPHRENIA IN THE KOREAN POPULATION**

*Lead Author: Tae-Youn Jun*
*Co-Author(s): Young-Eun Jung, M.D.*

**SUMMARY:**
Objective: The aim of this study was to investigate the genetic association of the FAT gene with schizophrenia in the Korean population, as well as analyzing the association of FAT gene with clinical variables.
Methods: Four variants within the FAT gene were investigated in 189 patients with schizohprenia and 119 healthy controls (rs2306987 A/C, rs2306990 T/C, rs2637777 G/T, and rs2304865 G/C).

Results: Significant association at the rs273777 with schizohprenia was observed; however, rs2306987, rs2306990, and rs2304865 were not associated with schizophrenia. Haplotype analyses revealed that the haplotype A/T/T/G was associated with a significantly protective effect. Sliding window analysis (rs2637777 G/T and rs2304865 G/C) revealed the more common T/G haplotype, included in the A/T/T/G protective combination, showed a small protective effect, in particular the effect was due to the rs273777 T variant (minor allele).
Conclusion; The present finding suggests that FAT polymorphism may play a putative role in the susceptibility to schizohprenia in the Korean population. Further studies using a larger number of subjects should be performed to determine whether the FAT gene polymorphism may be truly involved in the development of schizophrenia.

**NR3-050**

**THE RELATIONSHIP BETWEEN LOW SELF-ESTEEM AND SUICIDE ATTEMPT IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER**

*Lead Author: Myung Hun Jung, M.D., Ph.D., Co-Author(s): Hankaram Jeon, M.D., Duk–In Jon, M.D., Ph.D., Hyun Ju Hong, M.D., Ph.D., Narei Hong, M.D., Ph.D., Eun-Hee Park, M.A.,*

**SUMMARY:**
Objective: Depression is a major risk factor for suicide, and several psychological factors such as low self-esteem are involved on suicide. The aim of this study was to investigate the difference in self-esteem between non suicide attempters and suicide attempters with major depressive disorder.
Methods: The study subjects consisted of 52 patients who received inpatient or outpatient treatments at the Hallym University Sacred Heart Hospital. All participants were diagnosed as major depressive disorder by Korean version of the Mini-international Neuropsychiatric Interview (K-MINI). Columbia Suicide Severity Rating Scale (C-SSRS) was used to evaluate patient's suicide attempt. They completed a questionnaire that included Rosenberg Self-Esteem Scale (RSES), Beck Depression Inventory (BDI) and Beck Scale for Suicide Ideation (BSI).
Results: A total of 52 subjects were evaluated by C-SSRS, and among them, 32 were non suicide attempters and 20 were suicide attempters. Compared to non suicide attempters, suicide attempters showed significantly lower levels of self-esteem (t=3.492, p=0.001) and higher levels of BSI (t=-4.890, p<0.001). Although there was no significant difference between two groups for severity of overall depressive symptoms, negative attitude subscale of BDI was higher in suicide attempters than non suicide attempters (t=-2.596, p=0.014). A stepwise multivariate logistic regression analysis showed that low self-esteem was significant association with suicide attempt after adjusted by negative attitude subscale of BDI and BSI (odds ratio=0.779, p=0.042).
Conclusion: The present study indicated that low self-esteem plays a significant role in suicide attempters with major depressive disorder. Assessment of suicide risk should include not only suicide ideation and severity of overall depressive symptoms but also low self-esteem.

**NR3-051**

**IMPAIRED PREFRONTAL COGNITIVE CONTROL OVER EMOTIONAL INTERFERENCE IN ADOLESCENTS WITH INTERNET GAMING DISORDER**

*Lead Author: Young-Chul Jung, M.D.*
*Co-Author(s): Young-Chul Jung, M.D., Ph.D., Seojung Lee, M.D., Ji Won Chun, Ph.D., Dai-Jin Kim, M.D., Ph.D.*

**SUMMARY:**
Background:
Internet gaming disorder is a pattern of excessive and prolonged internet gaming that results in a cluster of cognitive and behavioral symptoms, analogous to substance use disorder and gambling disorder. Previous studies have reported potential relationship between excessive internet gaming and hypometabolic changes in the prefrontal area of adolescents.
Method:
We used functional magnetic resonance imaging to investigate how emotional stimuli (angry faces) interfered the performance and neural activity during a Stroop match-to-sample task in 18 male adolescents with internet gaming disorder (mean age =13.6 years old, SD=0.9) and 18 age- and sex-matched healthy controls.
Results:
The internet gaming disorder group showed longer reaction time and lower accuracy in emotionally interfered conditions compared to the healthy control group. In emotionally interfered conditions, the internet gaming disorder group exhibited increased activations in areas involved in face perception (fusiform gyrus) and emotional face processing (right insula), whereas the healthy control group exhibited increased activations in areas involved in cognitive control (dorsomedial prefrontal cortex) and selective attention (frontal eye fields, posterior parietal cortex). A seed-based functional connectivity analysis revealed that activations in the right insula showed negative correlations with activations in the frontal eye fields and posterior parietal cortex.
Conclusions:
These results indicate that the top-down cognitive control over emotional interference was impaired and bottom-up insular activations interfered with activations of the frontoparietal attention network in adolescents with internet gaming disorder.

**NR3-052**

**DISTURBED COORDINATION BETWEEN DEFAULT MODE NETWORK AND CENTRAL EXECUTIVE NETWORK IN CHRONIC FATIGUE SYNDROME**

*Lead Author: Young-Chul Jung, M.D.*
*Co-Author(s): Seojung Lee, M.D., Junghan Lee, M.D., Young-Chul Jung, M.D., Ph.D.*

**SUMMARY:**
Background:
Chronic fatigue syndrome is defined by a severe and unexplained fatigue of at least 6 months, characterized by malaise after exertion, unfreshing sleep, widespread muscle and joint pain, sore throat, and cognitive difficulties, including impairments in concentration and short-term memory. Resting-state functional magnetic resonance imaging studies have revealed that the human brain is intrinsically organized into two dynamic, anticorrelated functional networks: the default mode network (or the task-negative network) and the central executive network (or the task-positive network). A proper functional coordination between these normally anti-correlated networks is considered crucial for cognitive and executive functions.
Method:
We used region of interest seed-based functional connectivity analysis to investigate these two intrinsic networks and compare its connectivity pattern in 18 women with chronic fatigue syndrome (mean age =43.9 years old, SD=4.8) and 18 age- and sex-matched healthy controls. The posterior cingulate cortex and retrosplenial cortex were selected as seed regions for identifying the default mode network; the right and left dorsolateral prefrontal cortex for identifying the central executive network.
Results:
Activations of the posterior cingulate cortex and retrosplenial cortex demonstrated anticorrelations with activations of the dorsolateral prefrontal cortex in the healthy control group; however, there was no significant functional connectivity between the seed regions in the chronic fatigue syndrome group. In particular, stronger anticorrelated activations (i.e., negative functional connectivity strength) between the retrosplenial cortex and the dorsolateral prefrontal cortex correlated with lower chronic fatigue symptom scores.
Conclusions:
These findings suggest that the anticorrelated relationship between the default mode network and the central executive network was disturbed in chronic fatigue syndrome, which might contribute to the cognitive difficulties characterized by chronic fatigue syndrome.

**NR3-053**

**PSYCHIATRIC MORBIDITIES AND SUICIDALITY IN A COMMUNITY POPULATION WITH INTERNET ADDICTION IN KOREA**

*Lead Author: Byung-Soo Kim, M.D., Ph.D.*
*Co-Author(s): Joon Ho Ahn, M.D., Ph.D., Ahn Bae, M.D., Ph.D., Jae Nam Bae, M.D., Ph.D., Sung Man Chang, M.D., Ph.D., Maeng Je Cho, M.D., Ph.D., Seong-Jin Cho, M.D., Ph.D., In-Won Chung, M.D., Ph.D., Bong-Jin Hahm, M.D., Ph.D., Jin Pyo Hong, M.D., Ph.D., Hong Jin Jeon, M.D., Ph.D., Dong-Woo Lee, M.D., Ph.D., Jun Young Lee, M.D., Ph.D., Young Moon Lee, M.D., Ph.D., Jong-Ik Park, M.D., Ph.D., Sujeong Seong, M.D., Jee Hoon Sohn, M.D., Ph.D., Jung-Woo Son, M.D., Ph.D.*

**SUMMARY:**
Introduction
Few studies have been conducted for determination of the extent of occurrence of psychiatric disorders comorbid with Internet addiction. We examined the psychiatric morbidities and suicidality of community-dwelling subjects with internet addiction.
Methods
In an epidemiological survey of mental disorders among Korean adults conducted in 2011, a total of 6,022 subjects (age 18–74 years) completed the Korean version of the Composite International Diagnostic Interview for DSM-IV psychiatric disorders, Diagnostic Interview Schedule exploring pathological gambling, and questionnaire for suicidal ideation, plan, and attempt. Young's Diagnostic Questionnaire of Internet Addiction was administered to 3,723 individuals who had used the internet within one month before the interviews in order to classify addicted internet users (cutoff=5).
Results
Significant positive associations were observed between internet addiction and nicotine use disorder (Adjusted Odds Ratio [AOR]=3.874, 95% Confidence Interval [CI]=1.607-9.337, p=0.003), major depressive disorder (AOR=7.799, 95% CI=3.261-18.651, p<0.001), social phobia (AOR=15.034, 95% CI=2.257-100.157, p<0.001), obsessive compulsive disorder (AOR=33.776, 95% CI=6.736-169.353, p<0.001), post-traumatic stress disorder (AOR=14.160, 95% CI=3.549-56.502, p<0.001), generalized anxiety disorder (AOR=25.952, 95% CI=8.819-76.374, p<0.001), and pathologic gambling (AOR=8.229, 95% CI=1.278-52.993, p=0.027). In addition, subjects with internet addiction reported more suicide ideas (AOR=3.245, 95% CI=1.426-7.381, p=0.005) and suicide attempts (AOR=7.366, 95% CI=2.366-22.932, p=0.001) than subjects without internet addiction.
Conclusion
Internet addiction is highly associated with various psychiatric disorders and suicidality, suggesting that careful evaluation and treatment of such psychiatric disorders is needed for individuals with internet addiction.

**NR3-054**

**SUICIDAL IDEATION AND ASSOCIATED FACTOR IN KOREAN ELDERLY LIVING ALONE**

*Lead Author: hyun soo Kim, M.D.*
*Co-Author(s): Jae Won Lee, M.D. , Sang Joon Son, M.D., Ph.D.*

**SUMMARY:**
Objectives: The purpose of this study was to examine the relationship between suicidal ideation and associated factosr in community dwelling elderly living alone.
Design and Methods : A total of 329 community-dwelling elderly aged 65 years and over who lived alone were recruited in South Korea. Suicidal ideation was evaluated using the "suicidal thought" item of the Beck Depression Inventory. We used standard procedures to collect sociodemograghic data. Physical activity in daily life were measured combined activities of daily living (ADL) with instrument activities of daily living (IADL). Psychological factors included depression and elderly loneliness and these factors were evaluated by standradized scales. Statistical analyses including Pearson's correlation test and multiple regression were performed.
Results: Within our sample of elderly living alone, 22.7%

acknowleged current suicidal ideation. Physical ADL(r=-0.193, p<0.01) had a negative correlation with Suicidal ideation. Subjective economic status(r=0.141, p<0.05), subjective health status(r=0.114, p<0.05), loneliness(r=0.236, p<0.01) and depression(r=0.236, p<0.01) had positive correlations with suicidal ideation. Multiple regression analysis revealed siginificnat association between suicidal ideation and physical ADL(ADL+IADL)(p<0.05), age(p<0.05) and loneliness(p<0.01). However, no significant association were observed between Suicidal ideation and depression.
Conclusions : This study exhibit that physical ADL and loneliness are significantly associated with suicidal ideation. Preventative programs for ADL and loneliness may need to be considered for reducing suicidal ideation of community dwelling elderly living alone.

**NR3-055**
**ASSOCIATIONS BETWEEN OVERWEIGHT, OBESITY AND BULLYING AMONG SOUTH KOREAN ADOLESCENTS**
*Lead Author: Seung Gon Kim, M.D., Ph.D.*
*Co-Author(s): IL Hong Yun, Ph.D., Sang Hoon Kim, MD., Ph.D., Sang Hag Park, MD.,Ph.D., IL Han Choo, MD,PhD., Jae Hong Kim, MD.*

**SUMMARY:**
Objectives
The purpose of this study was to examine the associations between body weight and bully/victim experiences among a sample of south Korean middle school students
Methods
An epidemiological survey was conducted in a sample of 1,852 students (grades 7 through 9) from five middle schools in Gwang Ju , South Korea. We obtained data a self reported questionnaire asking about demographic information, body weight, height, bullying behavior
Results
The vast majority(88.72%) of the students were categorized as normal weight, while only 7.8% and 3.48% were classified as overweight and obese, respectively. physical victim was significantly for the male sample at the .05 level. Overweight youths were more likely to both physically bully others and be physically victimized by peers in comparison to normal weight adolescents. However, no association was observed with regards to obese boys and girls in all weight categories
Conclusion
It does not seem that South Korean middle school students are systematically subjected to higher level of bullying victimization by their peers due to their appearance related obesity. The findings are discussed in the South Korean cultural context.

**NR3-056**
**SLEEP PATTERNS AND PREDICTORS OF DAYTIME SLEEPINESS IN THE KOREAN ADOLESCENTS**
*Lead Author: Tae Yong Kim, M.D., Ph.D.*
*Co-Author(s): Suk-Hoon Kang, M.D., Jin Hee Choi, M.D., Hae Gyung Chung, M.D., Hyung Seok So, M.D., Tai Kiu Choi, M.D., Ph.D.*

**SUMMARY:**
Objectives
Various sleep patterns may be shown in Korean adolescents to be busy for studying. The aim of this study was to investigate sleep patterns of them and to evaluate predictors of affecting on mental health.
Methods
Among one thousand eleven high school students living in Cheonan-si, self-reported questionnaires, demographic variables including items about menstruation, morningness-eveningness questionnaire (MEQ), Beck depression inventory(BDI), Pittsburgh sleep quality index (PSQI) and Epworth sleepiness scale(ESS) were admitted.
Results
A total of 839 students (male=453, female=386) completed questionnaires. Significant differences were showed in sleep patterns (p=0.004), daytime sleepiness (p<0.001) and depression (p=0.013) between male and female participants. Logistic regression analysis showed that the presence of excessive daytime sleepiness was predicted by gender (OR=2.2, P=0.028) and sleep quality (OR=2.9, P=0.006). In the regression analysis of female students, dysmenorrhea (ß=0.117, p=0.021), eating of caffeine (ß=-0.109, p=0.027), sleep quality (ß=0.142, p=0.008) and depression (ß=0.149, p=0.005) might be associated with daytime sleepiness.
Conclusions
Korean adolescents showed significant daytime sleepiness and depressive symptoms. Daytime sleepiness was known to be related with cognitive dysfunction. Therefore, education program for improving of sleep quality in these adolescents should be considered for mental health.

**NR3-057**
**THALAMIC SHAPE AND COGNITIVE PERFORMANCE IN AMNESTIC MILD COGNITIVE IMPAIRMENT**
*Lead Author: Chang Uk Lee, M.D., Ph.D.*
*Co-Author(s): Jae Hoon Jeong, M.D., Changtae Han, M.D., Ph.D., Hyun Kook Lim, M.D., Ph.D.*

**SUMMARY:**
Introduction
Although previous postmortem studies have shown that thalamus is involved in early stage of Alzheimer's disease, no structural neuroimaging studies have conducted in amnestic mild cognitive impairment (aMCI) patients. In addition, the relationships between thalamic deformations and various episodic memory impairments were not clear. The aim of this study was to investigate thalamic shape changes and their relationships with various episodic memory impairments in aMCI.
Methods
Thalamic volumes and deformations were compared between the aMCI(N=32) and the controls(N=32). In addition, we explored the correlation pattern between thalamic deformations and cognitive dysfunctions in aMCI using a comprehensive neuropsychological battery.
Results
Patients with aMCI exhibited significant thalamic deformations in the dorsomedial and pulvinar areas compared with healthy individuals. Significant correlations were observed between constructional recall scores and the right dorsomedial areas in aMCI. Verbal delayed recall scores were also significantly correlated with the left dorsomedial areas in aMCI.
Conclusion
This study was the first to explore the relationships between

thalamic deformations and various types of cognitive performances in aMCI. These structural changes in the dorsomedial and pulvinar areas might be at the core of underlying neurobiological mechanisms

**NR3-058**

**THE EFFECT OF GROUP THERAPY ON DEPRESSION, ANXIETY, AND ANGER IN KOREAN PATIENTS WITH CORONARY HEART DISEASE : A RANDOMIZED CONTROLLED TRIAL**

*Lead Author: Sang Yeol Lee, M.D., Ph.D.*
*Co-Author(s): Hye-Jin Lee, Ph.D., Min-Cheol Park, M.D., Ph.D.*

**SUMMARY:**
Objective : The purpose of this study was to investigate the effects of group therapy on depression, anxiety, and anger in Korean patients with coronary heart diseases.
Methods : The subjects of the study were 135 outpatients with coronary heart diseases who regularly visited and received cardiovascular medication at the cardiovascular center in a university hospital. Among the 135 patients, 92 patients were selected according to high scores of depression, anxiety and anger, and then 45 patients were randomly selected and allocated into the experimental and control group. The final subjects were 37 patients excluding 8 patients who retracted their consent and lost follow up during the study. The experimental group received group therapy twice a week over a period of 3 months and cardiovascular medication, while the control group had continued only cardiovascular medication(no action). To examine the effect of group therapy, the scores of Beck Depression Inventory (BDI), State-Trait Anxiety inventory (STAI), and State-Trait Anger Expression Inventory (STAXI) were used. To figure out the effects of group therapy, mixed ANOVA using 2x2 repeated measurement design were used to compare any significant differences between experimental and control group.
Results : 1) There was no significant statistic difference in depression, sate-trait anxiety, anger and anger expression between experimental and control group before group therapy. 2) Depression were significantly reduced in experimental group compared to control group. 3) Trait anxiety were reduced in experimental group compared to control group, but not state of anxiety. 4) Trait and state of anger were reduced in experimental group compare to the control group. 5) In anger expression, anger-control was increased in experimental group compare to control group. Anger -out and anger-in were reduced in experimental group compare to control group.
Conclusion : The group therapy was significantly reduce depression, anxiety, and anger in patients with coronary heart disease. In particular, anger-in and anger-out were reduced the most, and anger control was increased after group therapy. It would be possible to apply group therapy usefully as a psychosocial intervention program in cardiac rehabilitation center for Korean patients with coronary heart disease.

**NR3-059**

**COMPARISON STUDY ON EARLY MALADAPTIVE SCHEMAS BETWEEN OBSESSIVE-COMPULSIVE DISORDER AND PANIC DISORDER**

*Lead Author: Seung Jae Lee, M.D., Ph.D.*
*Co-Author(s): Young Woo Park, M.D., Seung Hee Won, M.D., Ph.D., Hyo Deog Rim, M.D., Ph.D., Byung Soo Kim, M.D., Ph.D., Jiwoo Kim, M.D.*

**SUMMARY:**
Objectives: From a perspective of schema theory, comparing two anxiety disorders, obsessive-compulsive disorder (OCD) and panic disorder (PAD) may provide varied and dimensional information on personality characteristics and clues to additional therapeutic approaches to clinicians. Therefore, the present study aimed to investigate the potential differences in early maladaptive schemas between OCD and PAD.
Methods: Fifty one patients with OCD, 46 patients with PAD, and 70 normal controls (NC) were participated in this study. Demographic and clinical data were collected. Early maladaptive schemas and depressive symptoms were measured using the Young Schema questionnaire-short form (YSQ-SF) and the Beck depression inventory (BDI). Analyses of covariance (ACOVA) with age, sex, depressive scores, level of education as covariates were used to compare group differences.
Results: Patients with OCD showed prominently higher scores in the Defectiveness/Shame and the Social isolation/Alienation schemas compared with patients with PAD and NC. They also showed higher scores in the Failure schema compared with NC but not with subjects with PAD. On the other hand, patients with PAD were prominently activated in the Vulnerability to Harm or Illness compared with those with OCD and NC. In addition, they also showed higher scores in the Self-sacrifice compared with those with OCD but not with NC.
Conclusion: OCD and PAD subjects differ from each other in certain EMS characteristics, which could have potential therapeutic implications.

**NR3-060**

**MINOR PHYSICAL ANOMALIES IN PATIENTS WITH SCHIZOPHRENIA AND THE RELATIONSHIP WITH FUNCTIONALITY**

*Lead Author: Yehu Garfias*
*Co-Author(s): Ivan R. Escamilla, Irvin Garay, Tania Morales, Jorge J. Palacios, Ricardo A. Saracco-Alvarez*

**SUMMARY:**
Introduction;
It has been reported a close relationship between a high number of minor physical anomalies (MPAs) and the presence of schizophrenia. Likewise, it has also been reported a positive correlation between MPA and severity of the disorder (Gassab et al 2013). But there are few studies of the relationship between MPA and levels of functionality.
Method:
The aim of this study was to assess the presence of MPA in patients with schizophrenia and their relationship with functionality; it is a descriptive and observational study. We assessed 82 patients with schizophrenia. MPAs were assessed through use of a Modified Waldrop Scale (Gourion et al 2001); the schizophrenia psychopathology was evaluated by the Positive and Negative Syndrome Scale (PANSS) and Clinical Global Impression-Severity (CGI-S), functionality was assessed by Global Assessment of Functioning (GAF) and Functional Assessment for Comprehensive Treatment of Schizophrenia (FACT-Sz) (Suzuki et al 2012). Evaluations were performed by persons trained in the application of these scales; the project was approved by the local ethics committee.
Results:
There was no correlation between MPA and functionality total

scores, however when we classified functionality between acceptable (FACT-Sz >60) versus not acceptable (FACT-Sz <60), we observed a difference (x= 7.7 vs. x= 6.0 respective form t = 2.21, p= 0.03) Patients with schizophrenia showed a total MFA score of 7.3 +/-SD 3.1. No correlation was found between MPA and GAF, CGI and PANSS total scores
Discussion:
Probably one of the reasons that no differences were found was the characteristics of the sample. All of them were recruited from the outpatient department of the National Institute of Psychiatry in Mexico City, where they leads a monthly monitoring and most of them were in an acceptable functionality range according to FACTS-z. It would be important to consider in further studies, the evaluation of the drug treatment, looking for the distinction of refractory patients.

**NR3-061**
**ANTIBIOMANIA, AN ACUTE MANIC PSYCHOSIS FOLLOWING THE USE OF ANTIBIOTICS**
*Lead Author: Vartan Klain*
*Co-Author(s): Leo Timmerman, Dr.*

**SUMMARY:**
Background: There are in the literature a few case reports about the development of a manic-psychotic features after the use of antibiotics. This side effect is compared to the frequent and widespread use not very common.
Goal: Awareness about the potential neuropsychiatric side effects of antibiotics.
Case report: A 53 year old man was seen with since two days manifest agitation, religious utterances, confusion, sleep disturbance and sexual disinheriting. He started ten days before admission a course with Amoxicillin / Clavulanic-acid 500/125 mg t.i.d. for erysipelas to the right leg. He seems to be manic psychotic. During the hospitalization he refused to take the prescribed risperidon. He took only the lorazepam. On the third hospital day the psychiatric symptoms were fully remitted.
He had two years before the same psychiatric symptoms after a seven-day treatment with cotrimoxazole. His condition is completely disappeared within 24 hours after cotrimoxazol discontinuation and without any intake of psychotropic drugs.
Pathophysiology: Unclear. Possibly interact antibiotics with different neurotransmitters: for example antibiotics inhibits GABA-a and benzodiazepine receptors. This leads to a stimulation of the central nervous system resulting in neurotoxicity and reduction of the seizure threshold. The inhibition of the hepatic P450 enzyme system which results in increased serum levels of antibiotics and subsequently to neurotoxicity. Prostaglandins, cortisol and immune mediated cerebritis may also play a role.
Conclusion: Manic-psychosis as a side-effect of antibiotics is rare and the symptoms usually disappear within a few days after stopping the antibiotic and a treatment with psychotropic drugs is usually not necessary.

**NR3-062**
**PSYCHOLOGICAL IMPACTS OF TERRORISM IN KHYBER PUKHTOON KHWA (KPK), PAKISTAN**
*Lead Author: Mian I. Hussain*

**SUMMARY:**
Spread over a prolonged period of different forms of terrorism in the Khyber Pukhtoon khwa province Pakistan in the form of suicidal bombings attacks in public places, education institutions, markets, mosques, churches, temples, attacks on security forces, security institutions, jails, target killing, hanging of dead bodies after slaughtering, dacoits, kidnappings for ransom on mass levels, rapes, other form of violence & drones attacks have caused three to four fold increase in the psychological problems . The terrorism has different underlying etiological factors. The etiological factors include as spilled over phenomenon of afghan war, thousands miles of adjoining tough hilly Afghan border, already existing religious extremism in KPK particularly in FATA like North & South Waristan, Kurram Agency & PATA like Bajaward, Dir , Mahmud Agency & Swat valley, social economical & political backwardness & disadvantages & mushrooms of religious institutions. Terrorism has general & specific psychological impacts in the form of terror, loss of sense of security, anxiety disorders, depression, PTSD, prolonged bereavement & adverse effects on the mental health of children particularly. The remedies include short term & long term measures about the education of community about the prevention, and response at the time of any devastating event to minimize the damages, establishment of proper disaster management accident & emergency centers, multiple approach counseling centers, and establishing of true democratic institutions, a system based on justice, bringing socio-economic-cultural-education changes, developments & prosperity.
DR MIAN IFTIKHAR HUSSAIN, Consultant psychiatrist , Iftikhar Psychiatric Hospital

**NR3-063**
**GENETIC HETEROGENEITY IN AUTISTIC SPECTRUM DISORDERS: LESSONS FROM HIGHLY CONSANGUINEOUS SAUDI ARABIAN FAMILIES**
*Lead Author: Ahmad H. Adi*
*Co-Author(s): Basma Tawil , Brian Meyer, Micheal Nester, Mohammed Aldosari, Nada Al Tassan*

**SUMMARY:**
Autistic Spectrum Disorders (ASD) represents a spectrum of conditions with varying severity. ASDs have variety of contributing factors some of which are genetic, with no defined single genetic cause. However, around 10% of patients with ASD have been found to be associated with recognized causes. A variety of genetic methods have been utilized to study ASD, including genome wide scans, linkage studies of multiplex families, cytogenetic studies and copy number variation [CNV]. A number of associated susceptible genes and high risk loci in several chromosomes have been described in the literature before including 1p, 2q32, 5q, 6q21, 7q22, 11p12-p13, 13q, 16p13, 17q, 19p and X¬q13-q21. Single base pair substitutions in NLGN3, NLGN4, SHANK3 and PTEN genes were identified in rare cases of ASD with different degrees of severity. So far, we have recruited 79 families with affected individuals in our studies. In this abstract, we would like to report on pilot LOH analysis on 25 sporadic cases from singleton families from a highly inbred population where consanguinity is prevailing. We used the unaffected siblings as controls for our analysis. We searched for shared regions of homozygosity between affected individuals, and the cut off we used was that the region had to be present in at least 70 percent of affected individuals. Our analysis resulted in the identification of two candidate regions on

chromosome 6 and one candidate region on chromosome 16. All identified regions were smaller than 2Mb. We are yet to sequence those regions for any segregating mutations. However, compared to our previous analyses on multiplex families, the number of regions is much less than what would be expected. Our studies suggest the possibility of the involvement of other genetic mechanisms that might explain this complex phenotype and confirming the complex multifactorial etiology of ASD, pointing to genetic heterogeneity. We also suggest that genetic factors contributing to ASD may be different across different populations, as none of our families analyzed before show any genetic variants previously reported in the literature.

**NR3-064**

**BIPOLAR AFFECTIVE DISORDER AND SPECIFITIES OF PARENTING STYLES**

*Lead Author: Goran Gajic*
*Co-Author(s): Saveta B. Draganic-Gajic, M.D. Ph.D., Milica M. Pejovic-Milovancevic, M.D., Ph.D., Dusica Lecic Tosevski, M.D., Ph.D.*

**SUMMARY:**
Introduction: The relationship between bipolar affective disorder (BD) and parenting styles of mentally ill persons is unique in many ways. Numerous studies confirm the differences between patients who are parents and those who aren't, the specific parent-child relation and a strong stigma of theese families. However, the studies which explore the parenting quality of patients with BD are still rare. Objective: The aim of this research was the assesment of specific aspects of the parenting styles of patients with BD which could be important for conceptualizing a support program. Material and methods: A study was carried out in the Institute of Mental Health in Belgrade during 2013. The study consisted of thirty patients (n=30) who had been diagnosed with BD in accordance with ICD-10 criteria. All the patients were parents, and during the study they were in a period of remission. The evaluation of the functionality of their parenting styles was carried out by a semi-structural interview that involved an open type questioner, specifically designed for this research. Results: A domination of liberal parenting styles was established (62,1%), as well as an important absence of utilizing any form of punishment during the disciplining of their children (48,3%). Physical punishment was, however, present (24,1%). All the interviewed patients acknowledged using rewards, with money and gifts as the reward in 66.7% of the cases. A total of 62.1% of the patients organize and balance their free time. Concluson: The obtained results are important for developing specific psychoeducational programes including counseling for parents with bipolar affective disorder and their families. These support programs would be focused on strengthening their positive potentials and correcting recognized dysfunctional patterns.

**NR3-065**

**WAR-RELATED STRESSORS AND RATES OF PSYCHIATRIC DISORDERS AMONG SERBIAN WAR SURVIVORS**

*Lead Author: Cvetana Crnobaric, M.A., M.D.*
*Co-Author(s): Olivera Vukovic M.A, M.D., Cedo Miljevic, PhD, M.D Sanja Nikolic M.A, M.D Dusica Lecic Tosevski PhD, M.D*

**SUMMARY:**
Introduction: Recent studies have shown that psychiatric morbidity is high in general Serbian population after intense acute stressors and prolonged chronic stress. In addition to decreasingly of life of citizens that morbidity is a high burden for health services.
Objective: To examine war related-stressors and rates of psychiatric disorders in population of Serbian war survivors.
Design, Setting and Participants: A cross-sectional survey conducted after more than a decade long armed conflicts in the region of Former Yugoslavia (1990–2000). Participants: torture survivors, combat veterans, refugees, internally displaced people and survivors of Belgrade aerial bombardment, accessed through linkage sampling in the Belgrade community (N 522).
Main Outcome Measures: Semi-structured Interview for Survivors of War, Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), Clinician-Administered PTSD Scale for post-traumatic stress disorder (PTSD), and self-rated measures of PTSD, depression and anxiety.

Results and Conclusion: PTSD seems to be the most common psychiatric condition among war survivors with high trauma exposure (16%), followed by depression (12%) and anxiety disorders (9%). Co-morbid depression in most cases may be secondary to PTSD. Future studies need to examine how the different types of war stressors relate to post-trauma psychological problems.
Key words: PTSD, depression, war trauma, stress

**NR3-067**

**PSYCHOSOCIAL NEEDS OF CANCER PATIENTS AT EARLY TREATMENT STAGES IN SINGAPORE**

*Lead Author: Rathi Mahendran, M.B.B.S., M.Med.*
*Co-Author(s): Joanne Chua, B.Sc., M.Sc., M.Psy.(Clinical), Ee Heok Kua, M.B.B.S., M.D., Haikel A. Lim, B.Soc.Sc.(Hons)*

**SUMMARY:**
Introduction: Psychosocial needs are high amongst cancer patients, and screening for these needs is recognized as integral to quality cancer care. In Singapore, an island-state in Southeast Asia, cancer clinics have only recently begun to screen for distress in cancer settings. This study identified the psychosocial needs of cancer patients at their first visit at a hematology-oncology clinic at the National Cancer Institute Singapore.
Methods: Within a three-month period, 54 consecutive new patients, diagnosed with various cancers, with and without prior treatment (i.e., surgery or radiation therapy), participated in this ethics-approved study. Participants completed the Distress Thermometer and the Problem List (PL), the Hospital Anxiety and Depression Scale (HADS), and the EuroQol Quality of Life Scale, and a standard demographic questionnaire at their first visit. All data were analyzed with SPSS.
Results: Analyses revealed that 82% of patients had psychosocial needs, with an average of 2.7 ± 2.3 problems on the PL. Emotional concerns formed the top four psychosocial needs of the cohort (worry, 46%; fears, 26%; nervousness, 26%; sadness 24%), with the fifth being a Practical concern (insurance/finance 22%). The next most frequently reported problems were a mix of Practical concerns (work/school, 15%), Family concerns (dealing with children, 9%), Emotional concerns (depression, 15%), and Physical concerns (sleep, 17%; pain, 15%). Problems that patients did not report at the first visit were mostly Physi-

cal concerns such as nausea, getting around (mobility), breathing, diarrhea, fever, and tingling in hands/feet, and the Spiritual concern of loss of faith. Emotional concerns of fear (p = .045) and sadness (p = .039) were more frequent amongst 41 to 50 year olds, and significantly correlated with distress scores (p = .013). Practical concerns were significantly positively correlated with HADS-Depression scores (r[54] = .28, p = .040). Family concerns were more significant in women than men (0.91 vs. 0; t[43] = −2.07, p = .044). The overall score on the Problem List correlated positively with distress (p = .025), anxiety (p = 0.043) and poorer quality of life (QOL) scores (p = 0.043).
Conclusion: The findings highlight the significant distress, and preoccupation with emotional and practical concerns, with consequent poorer QOL in patients at their first visit for decisions on chemotherapy. This may lead to inattentiveness to complex medical information and difficult treatment decisions. Oncologists and healthcare teams, in Singapore, at least, need to be aware of the presenting problems early in patients' cancer treatment journey. This study underscores the importance of early identification of psychosocial issues, and the provision of appropriate interventions even before the first oncologist visit or chemotherapy drugs are delivered. This is a concept that can be supported by innovative communication and outreach programs for patients.

**NR3-068**

**CLINICAL IMPORTANCE OF ASSESSMENT OF LANGUAGE PROCESSES IN DEMENTIA AND MCI**

*Lead Author: Maria Kralova, M.D., Ph.D.*
*Co-Author(s): Beata Hideghétyová, MD, Jana Marková, PhD, Zsolt Cséfalvay, PhD*

**SUMMARY:**

AIM: To detect the language deficits (on higher level of language information processing, i.e. in sentence comprehension) in patients with MCI and dementia and to determine the relationship between this deficits and the severity of cognitive disturbances.
METHOD: In the sample of 72 cognitively declined outpatients and inpatients of Department of psychiatry of University Hospital in Bratislava, Slovakia we evaluated severity of cognitive impairment by MMSE and MoCA instruments. From these 72 people 7 were diagnosed as MCI, 29 as mild, 32 as moderate and 4 as severe dementia (majority of them with Alzheimer´s disease). We used our own logopaedic test for sentence comprehension. Performances of patients were compared with the performances of healthy people with different educational level.
RESULTS: Normal performance in sentence comprehension test we registered in 5 patients with MCI, in only 2 patients with mild, 2 patients with moderate and no patient with severe dementia.
CONCLUSION: Although the language processes at the simple level of word in majority of cognitively disturbed patients were preserved (comprehension of individual words, naming of nouns and verbs in individual subgroups except severe dementias exceeded on average 90%) and clinically the language processes seemed to be normal, the sentence comprehension was even in patients with mild dementia substantially impaired. Testing of language functions in patients with dementia only at the simple word level (what is typical in routine clinical practice) doesn´t capture real communication disturbances. At least in patients with MCI and mild dementia is very useful to carry out more detailed logopaedic testing, which can reveal the onset of language disturbances.

**NR3-069**

**COGNITIVE PERFORMANCE AND PATTERN OF TOBACCO USE IN PATIENTS WITH SCHIZOPHRENIA.**

*Lead Author: Susana Al-Halabí, Ph.D.*
*Co-Author(s): Eva M. Díaz-Mesa, Psy.D., Leticia García-Álvarez, Ph.D., Sergio Fernández-Artamendi, Ph.D., Pilar A Sáiz, M.D., Ph.D., M. Paz García-Portilla, M.D., Ph.D., Julio Bobes, M.D., Ph.D.*

**SUMMARY:**

Introduction: The self-medication hypothesis suggests that schizophrenia patients may smoke in an attempt to reduce their cognitive deficits, their symptoms or the antipsychotic side-effects.
Aim: to identify the relationship between smoking topography and cognitive performance among outpatients with schizophrenia.
Method: The sample included 30 smoking outpatients with DSM-IV schizophrenia from a Mental Health Center located in the North of Spain [63.3% males; mean age (SD) = 44.73 (7.71)]. Instruments: (1) Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS). (2) Pattern of tobacco use: nº cigarettes/day; Fargerstrom test for nicotine physical dependence; Glover-Nilsson test for nicotine psychological dependence; Expired carbon monoxide (CO ppm). (3) Psychopathology: Positive and Negative Syndrome Scales (PANSS); Clinical Global Impression of Severity (CGI-S). This study was supported by the Instituto de Salud Carlos III grant PI 11/01891, and by the Centro de Investigación Biomédica en Red de Salud Mental, CIBERSAM.
Results: prevalence was 22.2% for light smokers [11-19 cigarettes/day; Mean CO (SD)=24.5 ppm (12.4)], 36.7% for medium smokers [20-29 cigarettes/day; Mean CO (SD)=23.6 ppm (8.2)], and 40.7% for heavy smokers [≥ 30 cigarettes/day; Mean CO (SD)=36 ppm (16]. PANSS mean score (SD)=5.90 (13.72); CGI-S mean score (SD)=3.64 (1.12). MATRICS mean scores (SD): TMT=55 (26); BACS=39.5 (15.3); HVLT=24.7 (5.3); WMS =15.03 (4.4); LNS=13.3 (4.8); NAB=11.5 (6.4); BVMT=18.1 (10.1); Fluency=19.9 (6.3). No significant differences were found in psychopathology measures (PANSS and CGI-S) and tobacco dependence tests (Fargerstrom and Glover-Nilsson) according to the 3 patterns of tobacco use (p=0.779, p=0.454, p=0.838 and p=0.309, respectively). Similarly, there were no significant differences in the MATRICS tests performance according to the 3 different levels of tobacco use (light smokers = 1; medium smokers = 2; heavy smokers = 3). TMT mean score (SD): 1=53.1 (6.1), 2=62.7 (33.2), 3=49.9 (27.0); F=0.61, p=0.549. BACS mean score (SD): 1=40.3 (13.2), 2=35.5 (15.4), 3=40.2 (17.4); F=0.28, p=0.75. HLVT mean score (SD): 1=26 (2.7), 2=22.5 (5.7), 3=26.2 (6.1); F=1.36, p=0.27. WMS mean score (SD): 1=13.8 (3.6), 2=14.3 (3.7), 3=16.4 (5.4); F=0.89, p=0.42. LNS mean score (SD): 1=13.1 (4.6), 2=11.2 (5.4), 3=14.2 (4.2); F=1.08, p=0.35. NAB mean score (SD): 1=9.8 (7.3), 2=12.3 (6.6), 3=12.7 (6.1); F=0.39, p=0.67. BVMT mean score (SD): 1=14.1 (8.3), 2=18.1 (11.4), 3=19.1 (10.3); F=0.46, p=0.63. Category Fluency mean score (SD): 1=20.1 (1.6), 2=18.4 (6.2), 3=19 (7.3); F=0.15, p=0.85).

Conclusion: In this sample of patients with schizophrenia, there is no relationship between the pattern of tobacco use and cognitive performance assessed by MATRICS. However, the sample of this study is small.

**NR3-070**

**RISK AND PROTECTIVE FACTORS ASSOCIATED WITH NON-SUICIDAL SELF-INJURY THOUGHTS AND BEHAVIOR IN SPANIARD ADOLESCENTS EVALUATED AT A CLINICAL SETTING**

*Lead Author: Raquel Alvarez-Garcia, M.D.*
*Co-Author(s): Mónica Díaz de Neira, Psy.D., Rebeca García-Nieto, Ph.D., Lucía Rodríguez-Blanco, Psy.D., Enrique Baca-García, M.D., Juan J. Carballo, M.D.*

**SUMMARY:**
INTRODUCTION:
Non-suicidal Self-Injury (NSSI) is defined as the direct, repetitive, intentional injury of one's own body tissue -such as cutting, burning, scraping skin, hitting and biting oneself-, performed without suicidal intent, that is not socially accepted. In a recent review, a mean lifetime prevalence rate of 18% was reported, compared to an estimated rate of 4% in the adult population. Previous research conducted in western countries has indicated different risk and protective factors associated with NSSI in both clinical and epidemiological samples. However, there is a lack of studies focusing on these risk and protective factors in Spain.
OBJECTIVES:
1) To determine risk and protective factors associated with NSSI thoughts and behavior in Spaniard adolescents evaluated in a clinical context.
METHODS:
267 adolescents, ages 11-17, were recruited from the Child and Adolescent Outpatient Psychiatric Services, Jiménez Díaz Foundation University Hospital (Madrid, Spain) from November 1st 2011 to October 31st 2012. All participants were administered the Spanish version of the Self-Injurious Thoughts and Behaviors Interview (SITBI). Other instruments used were: STAXI-NA, CDI, SDQ, Stressful Life Events Inventory, and the Family-Apgar Questionnaire. Socio-demographic data were obtained by a semi-structured interview. Clinical diagnoses were assigned by clinicians.
According to the SITBI, subjects were divided into three groups: 1) Control group, composed of those adolescents who denied any self-injurious thoughts and behaviors (n=169); 2) NSSI thoughts Group, consisting of those subjects who reported some type of NSSI thought (n=39); 3) NSSI behavior Group, composed of those subjects who reported NSSI behavior (n=59). 29 subjects that did not meet group criteria were excluded for the purposes of this study.
Univariate and multivariate analyses were performed.
RESULTS
No statistical significance was found between groups in any of the sociodemographic variables studied or clinical diagnoses assigned. A statistically significant association was found between NSSI behavior and conflicts with family, friends, or couple, break-up of a relationship, and substance addiction of a family member. Statistically significant association between NSSI behavior and family functioning was found. Internalizing anger, depressive symptoms, and emotional problems were significantly associated with the presence of NSSI behavior. Internalization of anger increased 10 times the risk of NSSI thoughts while emotional problems increased 6 times the likelihood of NSSI behavior. An optimal family functioning was a protective factor for NSSI.
CONCLUSIONS
This study confirm previous findings indicating a relationship between NSSI thoughts and behaviors and different social -relational life events, and between NSSI and higher levels of internalized psychopathology. Adolescent's perception of adequate family functioning may be a protective factor of NSSI.

**NR3-071**

**MALTREATMENT AND SUICIDE ATTEMPTS IN A SAMPLE OF TRANSGENDER INDIVIDUALS**

*Lead Author: Hilario Blasco-Fontecilla, M.D., Ph.D.*
*Co-Author(s): Lucía Pérez-Costillas, M.D., Paula Artieda-Urrutia, M.D. José Guzmán-Parra, M.D., Yolanda de Diego Otero, M.D., Nicolás Sánchez-Álvarez, M.D., Trinidad Bergero-Miguel, M.D.*

**SUMMARY:**
Introduction: There is a lack of information about suicide attempts among transgender individuals. Rates of suicide attempt range between 19 and 41%, and occur more frequently among adolescents and young individuals.
Objectives: To test if maltreatment is associated with the risk of presenting suicide attempts in transgender individuals.
Material and methods: Sample: 441 (256 men; 185 women) transgender individuals evaluated at the Carlos Haya Hospital in Malaga between 2001 and 2012. All individuals completed a semi-structured interview including socio-demographic and clinical factors, and the The Mini International Neuropsychiatric Interview (MINI), among others. Associations between suicide attempter status and maltreatment were tested using the Wald $\chi 2$. All analyses were carried out with SPSS (Mac, v.20).
Results: The male to female transgenders (MFs)/female to male (FMs) ratio was 1.4. Mean age at evaluation was 27.8 (SD=8.8) (MFs=27.8 ± 9.6; MFs: 27.7 ± 7.7). 106 (24.9%) of our sample were suicide attempters. 64% of transgender individuals were diagnosed with at least one mental disorder using the MINI. 79.6% of transgender individuals reported some kind of maltreatment in the childhood or adolescence, and 76% in the adulthood. Furthermore, 286 (67.3%) reported to have suffered frequent maltreatment –defined as those individuals suffering any kind of maltreatment more than once-. Compared with transgender individuals without maltreatment histories, transgender individuals who had suffered any kind of maltreatment were more likely suicide attempters (88.5% vs. 73.1%, Fisher exact test (FET) $p<0.001$). Furthermore, the presence of physical maltreatment in the adulthood increased the risk of being a suicide attempter (51.7% vs. 31.4%, FET $p=0.002$). However, neither verbal abuse nor sexual abuse in the adulthood increased the risk of being a suicide attempter (86.7% vs. 93.6%, ns; and 7.1% vs. 4.5%, ns, respectively). Moreover, transgender individuals who had suffered frequent maltreatment were more likely to be suicide attempters than those who had not been frequently maltreated (79.2% vs. 63.3%; $\chi 2=11,566$, $df=2$, $p=0.003$). Finally, even if the rate of maltreatment in the childhood or adolescence was very high among transgender individuals, there were not statistical differences with regard to suicide attempter status.
Conclusion: The rate of suicide attempters in our sample

was higher than the rate of suicide attempters in the general population, but it is in keeping with available literature. Transgender individuals in our sample appear to be a very victimized population across life span, with particular emphasis on physical maltreatment in adulthood. Furthermore, maltreatment appears to have a dose-dependent effect in increasing the risk of attempt suicide. The present study suffers from the usual limitations of retrospective studies (e.g. we cannot infer causal links), and the lack of use of an standardized measure of maltreatment.

**NR3-072**

**ARE MAJOR REPEATERS PATIENTS ADDICTED TO SUICIDAL BEHAVIOR?**

*Lead Author: Hilario Blasco-Fontecilla, M.D., Ph.D.*
*Co-Author(s): Paula Artieda-Urrutia, M.D., Jose de Leon, M.D., Enrique Baca-Garcia, M.D., Philippe Courtet, M.D., Ph.D., Rebeca Garcia-Nieto, M.D.*

**SUMMARY:**

Background: Major repeaters (individuals with ≥5 lifetime suicide attempts) have been very poorly studied. We have recently suggested that major repeaters are a distinct suicidal phenotype characterized by female gender, a particular personality profile, and the presence of eating disorders, among others.
Objective: to explore if major repeaters are individuals who could be addicted to suicidal behavior.
Method: Sample and procedure: This is a cross-sectional study. All 150 suicide attempters were recruited from the Psychiatric Short-Stay service of the Department of Psychiatry, Jiménez Díaz Foundation (Madrid, Spain) between January and December 2012. Sociodemographic data were obtained by semi-structured interviews. Axis I disorders were diagnosed using the Mini International Neuropsychiatric Interview (MINI). All participants were administered the Spanish version of the Self-Injurious Thoughts and Behaviors Interview (SITBI). Characteristics of suicide attempters included reported function and precipitants of both suicidal behavior in a likert scale (0 to 4). Statistical Analyses: Univariate differences between major repeater and non-major suicide attemtpers were tested using the Chi-Square. Results: The mean (SD) age of all patients was 43.3 (10.3). 7.4% of suicide attemtpers were major repeaters. Compared to non-major suicide attempters, major repeaters displayed more Axis I comorbid diagnoses (45.5% vs. 18.8% ; FET p=0.05). Importantly, major repeaters were more likely than non-major suicide attempters to report that they had attemped suicide either “to stop bad feelings” (automatic negative reinforcement) (90.9% vs. 45.7%; $\chi 2=8.35$, df=1, p=0.004) or “To feel something, because you felt numb or empty” (automatic positive reinforcement) (54.5% vs. 10.1%; $\chi 2=17.28$, df=1, p<0.001).
Conclusion: Most major repeaters attempt suicide to either stop bad feelings or to feel something. In other words, most suicide attempts were made for emotional regulation purposes (relief of psychological pain or emptiness). Given that psychological and physical pains appear to share neuroanatomical pathways, it is plausible that endogenous opioids are involved in the tendency for major repeaters to repeat suicide. Indeed, the endogenous opioid system has been related to the modulation of responses to physical and emotional stressors, and some authors have shown decreased endogenous opioids in self-injurers with cluster B personality disorders. In other words, our study suggest that addictive mechanisms might operate in major repeaters. If our results are replicated, they may open new avenues for the treatment of major repeaters.
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**NR3-073**

**PALIPERIDONE PALMITATE: EFFICACY IN REDUCTION OF HOSPITAL ADMISSIONS**

*Lead Author: Maria Teresa Campillo Sanz, M.D.*
*Co-Author(s): Ariadna Balague,M.D., Joan Calvo M.D., Petra Gento M.D., Montserrat Ibarra M.D., Victoria Olles M.D., Ermitas Turnes M.D.*

**SUMMARY:**

Objective:
Paliperidone palmitate long-acting injectable (PP) was launched in November 2011 in Spain. Not much is yet known about its clinical utility compared with others antipsychotics.
Our aim is to analyze if PP can reduce significantly number of hospital admissions in a sample of schizophrenics patients.
Methods:
39 patients diagnosed (DSM-IVR) of schizophrenia disorder, who had prior received either oral or long-acting injectable antipsychotics, were switched (because side-effects, non-compliance or inefficacy) to paliperidone palmitate, monthly doses of 156-234mg.
We compared number of hospital admissions 2 years before and 18 months after the switch.
T test and Chi-square test were performed for statistical analysis (SPSS).
Results:
N:39 (69.2% M) Mean Age: 41.9 years
Prior treatment: Others long-acting antipsychotics 41%, Oral second-generation antipsychotics 59%.
Before PP introduction, 56.4% of the patients had been admitted in hospital once or most times. The average hospital admissions were 0.79 Std dev: 0.9
At the end of 18 months follow-up only 17.9% of the subjects had been admitted in hospital, and the main number of hospital admissions were 0.28 Std dev: 0.7
T= 2.512 df: 38 p=.016
We didn’t found any differences by type of prior antipsychotic treatment.
Conclusions:
Despite the small sample,we found like others authors (1,2) that Paliperidone Palmitate is an effective antipsychotic, that can reduce significantly the rates of hospital admissions and improve the outcome of schizophrenic patients.
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**NR3-074**

**DISENGAGEMENT FROM TREATMENT IN AN EARLY PSYCHOSIS PROGRAM IN CATALONIA (SPAIN)**

*Lead Author: Marta Coromina*
*Co-Author(s): Belen Marzari, Esther Lobo, Marta Núñez, Trinidad Peláez, Judith Usall, Susana Ochoa*

**SUMMARY:**
Introduction:
Disengagement from treatment is a major concern in psychiatry particularly for those presenting a first episode of psychosis.
Objectives:
The aim of this study is to assess the predictors of disengagement in all the patients included in the early psychosis program of Cerdanyola-Ripollet (Catalonia).
Methods:
Cerdanyola-Ripollet early program admitted 114 patients from 2007 until October of 2013.
Treatment is scheduled in 5 years program.
Dropouts of the program are define as patients without any contact with the mental service for more than 6 months.
Sociodemographic and clinical variables were collected as gender, age, psychiatric disorder (DSM-IV), history of admissions in psychiatric unit, antecedents of substance abuse disorder, persistence of substance use disorder during treatment and subtype of early psychosis (High risk mental state, first-episode psychosis and critical period).
Results:
21 patients (18%) disengaged from service. People who have a diagnostic of EMAR and those who are derived from the primary care physician have a tendency to disengage (p=0.07-0.08).
No differences were found between people who disengaged and those who do not disengaged regarding gender, stability or being severe mental disorder.
Conclussions:
Engagement strategies are a main element in early treatment services attending carefully to pacient with lower severity of the illness.

**NR3-075**

**DSM5 AND SUBSTANCE-INDUCED PSYCHOSIS: IS IT THAT RELEVANT? A CASE REPORT.**

*Lead Author: Mario De Matteis, M.D.*
*Co-Author(s): Marta Bravo, M.D., Nestor Szerman, M.D.*

**SUMMARY:**
We report a paradigmatic case of a young male in which different factors can explain the onset of psychotic symptoms, and the first diagnosis of cannabis-induced psychosis has been a problem for the treatment of a person that actually thinks that the only way to develop psychotic symptoms is using drugs.
Cannabis use is associated with psychosis, particularly in those people with vulnerability to psychotic illness.
Cannabis (as other substances) acts as a component cause of psychosis, it increases the risk of psychosis in people with genetic or environmental vulnerabilities, but it is neither a sufficient nor a necessary cause of psychosis.
According to this Hypothesis we think that the differentiation between substance-induced psychosis and “not due to substances” psychosis should not exist.

**NR3-076**

**LONG-TERM DAMAGES OF LITHIUM INTOXICATION**

*Lead Author: José de Santiago Sastre*
*Co-Author(s): Asuncion Sánchez Peña, Ph.D ; Elena Calzada Miranda, Ph.D; Rocio Gómez Martínez, Ph.D; Arancha Ugidos Fernández,Ph.D; Clara Franch Pato,Ph.D; Antonio Serrano García Ph.D*

**SUMMARY:**
1987 saw the appearance of SILENT, or “syndrome of irreversible lithium-effectuated neurotoxicity”, defined by neurological deficiencies sustained over at least two months and due to lithium intoxication in the absence of concomitant medication and with no other explicable cause.
Our aim was twofold: to review the scientific literature on SILENT and to carry out a retrospective descriptive study of those patients admitted to León Hospital for lithium intoxication who had irreversible neurological signs compatible with SILENT.
We reviewed the case histories of all patients intentionally or accidentally intoxicated with lithium carbonate in different Departments of León General Hospital and the data of their treatment and follow-up over the last 11 years. We also carried out a systematic review of the scientific literature on the PubMed database on the irreversible neurological toxic effect of lithium carbonate intoxication.
Relatively little has been published on SILENT, most of it mainly concerning the following: It is more common over the age of 30 and among women. It has been more frequently observed in chronic intoxications. occurs more commonly in association with antipsychotics, especially phenothiazines and haloperidol. Its onset is favoured by preceding neurological disturbances. High temperature is the preceding organic pathology most frequently associated, although predisposition has also been noted to dehydration, renal symptoms and SNC infection. Regarding residual neurological signs, it can affect both the SNC and the periphery, although is more commonly cerebellar.
In the study we present, the data agree. We consider fever as a factor of predisposition especially interesting long periods of hospitalization being necessary in al cases (an average of 27 days).

**NR3-077**

**TOLERABILITY AND TREATMENT ADHERENCE OF HIGH DOSES OF PALIPERIDONE PALMITATE IN SEVERE SCHIZOPHRENIC PATIENTS**

*Lead Author: Juan J. Fernandez-Miranda, M.D., Ph.D.*
*Co-Author(s): Sylvia Díaz-Fernández, PN*

**SUMMARY:**
Background: Tolerability of antipsychotics is important to increase treatment compliance, and consequently to reach rehabilitation goals in people with severe schizophrenia. Clinical trials of paliperidone palmitate (PP) don’t show tolerability of doses of 150 mg. Eq. and over every month
Objectives: to evaluate tolerability and adherence to treatment of high doses of PP (150 mg eq. and over) in severe schizophrenic patients (Global Clinical Impression (GCI) severity scale of 5 and over).

Methods: 18-month prospective, observational, open-label and not randomized study of patients with schizophrenia (CIE-10 F-20). Patients underwent treatment with PP (doses of 150 mg eq. and over every 28 day) for 18 months (N=24). All of them changed from other antipsychotic treatment (oral or long acting injectable) due to lack of effectiveness or side effects. Assessment included the GCI severity scale, the WHO Disability Assessment Schedule (WHO/DAS) and the Medication Adherence Rating Scale (ADHES) at the beginning and after 18 months of treatment. Drug tolerance was monitored with laboratory tests (haematology, biochemistry and prolactin levels), weight, adverse effects reported and reasons for treatment discharge. Main statistical analyses were to compare scale scores and laboratory test results before and after 18 months of PP treatment (CI=95%).
Results: The average dose of PP was 229.1 (12.3) mg. eq/28 day (Rank 150-400). Tolerability was good and there were no discharges due to side effects or to relevant biological parameters alterations. Weight and prolactin levels decrease, but not significantly. Retention rate in treatment after 18 months was 100 %. GCI, DAS and ADHES showed significant changes: GCI and DAS (in the four areas) decreased ($p<0.01$) and ADHES increased in ($p<0.01$).
Conclusions: Tolerability of 150 mg and over every 28 day of PP was very good, being useful in improving treatment adherence in severe schizophrenic patients who had needed high doses to get clinical stabilization.

**NR3-078**

**THE INFLUENCE OF COGNITIVE RESERVE ON PSYCHOSOCIAL AND NEUROPSYCHOLOGICAL FUNCTIONING IN BIPOLAR DISORDER.**

*Lead Author: Irene Forcada*
*Co-Author(s): Maria Mur, M.D., Ph.D., Ester Mora, M.D., Eduard Vieta, M.D., Ph.D., David Batrés-Faz, Ph.D., Maria J. Portella, Ph.D.*

**SUMMARY:**

Background. Cognitive Reserve (CR) refers to the hypothesized capacity of an adult brain to cope with brain pathology in order to minimize symptomatology. CR was initially investigated in dementia and acute brain damage, but actually is being applied to other neurological and psychiatric conditions. The present study applies this concept to a sample of euthymic bipolar patients compared with healthy controls with the aim to investigate the role of CR in predicting psychosocial and cognitive outcome in bipolar disorder (BD).
Methods. The sample included 54 subjects: 28 patients meeting DSM-IV criteria for BD type I or II and 26 healthy controls (HC) matched for age and gender. They were all assessed with a cognitive battery tapping into executive and memory cognitive domains. CR was obtained using three different proxies: education-occupation, leisure activities and premorbid IQ. Psychosocial functioning was evaluated by means of the Functioning Assessment Short Test (FAST). MANCOVAs were performed to determine differences in cognitive and functioning variables. Linear regression analyses were carried out to predict neuropsychological and psychosocial outcomes.
Results. Euthymic bipolar patients showed worse neuropsychological performance and psychosocial functioning than HC. The linear regression models revealed that CR was significantly predictive of FAST ($\beta=-0.53$, $p=0.001$), executive index ($\beta=0.64$, $p<0.001$) and memory index ($\beta=0.36$, $p=0.04$).
Conclusions. CR is a significant predictor of cognitive and psychosocial functioning in euthymic bipolar outpatients. Therefore, CR may contribute to functional outcome in BD and may be applied in research and clinical interventions to prevent cognitive and functional impairment.

**NR3-079**

**TEST-RETEST RELIABILITY OF DSM-5 DIAGNOSTIC CRITERIA FOR DELIRIUM: PILOT REPORT FROM SPAIN**

*Lead Author: José G. Franco, M.D., M.Sc., Ph.D.*
*Co-Author(s): Gisela Ferré, B.A., Ana M. Gaviria, Ph.D., Imma Grau, M.D., José Palma, M.D., Esteban Sepulveda, M.D., Paula T. Trzepacz, M.D., Elisabet Vilella, Ph.D., Eva Viñuelas, M.D.*

**SUMMARY:**

INTRODUCTION: Patients may not receive similar treatment without diagnostic reliability among clinicians. Our aim is to evaluate the reliability of DSM-5 delirium criteria.
METHODS: Study approved by the Institutional Ethics Board, informed or proxy consent was obtained. Within six months, consecutive patients admitted to a skilled nursing facility were assessed in their first 24-48 hours of admission by two clinicians (psychiatrist and neuropsychologist) who separately evaluated them with the DSM-5 delirium criteria (using an interview containing each one of the items from the criteria, to be fulfilled as present or not). In order to evaluate a probable antecedent of dementia, the Spanish IQCODE (>3.3 cutoff) was completed during an interview with the main caregiver. Kappa index (K) and its 95%CI was used to assess reliability of DSM-5 criteria and items. K ≥060 was considered very good, between 0.40 and 0.59, good, and ≤0.39, questionable.
RESULTS: 138 patients were eligible, 13 (9.4%) were not evaluated due to language difficulties or denied consent. The study sample comprised 125 subjects, 87 (69.6%) of these had probable dementia. Those with probable dementia were older than the rest of the sample (80.1±8.0 vs. 75.7±10.7 years; $t=2.255$, $p=0.028$). 20 (52.6%) of those with probable dementia and 42 (48.3%) from the group without dementia, were male (p NS). The most frequent admission diagnoses were hip fracture (n=16; 12.8%), and all other fracture types and cerebrovascular disease had 12 (9.6%) cases each (no significant differences between non-demented and probably demented patients, data not shown). 31 (24.8%) patients had DSM-5 delirium according to psychiatrist evaluation (26 or 29.9% from the probable dementia group, and 5 or 13.1% from the nondementia group; $X2=3.968$, $p=0.046$).
Reliability for DSM-5 delirium criteria was very good (K=0.74, 95%CI 0.60-0.88). Reliability was between good or very good for 4/5 diagnostic items: Item A (attention-awareness) K=0.63 (95%CI 0.49-0.78), item B (temporal onset-course, and fluctuation) K=0.66 (95%CI 0.51-0.81), item C (an additional disturbance in cognition) K=0.47 (95%CI 0.29-0.66), item D (the disturbances are not better explained by another neurocognitive disorder or severely reduced level of arousal) K=0.72 (95%CI 0.59-0.85), item E (etiologic factors) K=0.59 (95%CI 0.45-0.73). Reliability for delirium diagnosis in the group with probable dementia was similar to the whole sample (K=0.75, 95%CI 0.60-0.90); reliability of item A (K=0.61, 95%CI 0.44-0.77), item B (K=0.63, 95%CI 0.46-0.80), and item D (K=0.71, 95%CI 0.55-

0.86) were also similar to the whole sample, but concordance was lower (and questionable) for items C (K=0.38, 95%CI 0.05-0.70) and E (K=0.54, 95%CI 0.37-0.71).

CONCLUSIONS: Reliability of DSM-5 delirium diagnosis between two trained raters is very good. As expected, evaluation of cognition and etiologies of delirium is more difficult in patients with probable dementia.

**NR3-080**

**COGNITIVE, PERCEPTUAL, AND EMOTIONAL ABNORMALITIES INVOLVED IN THE PATHOGENESIS OF DELUSION IN DELUSIONAL DISORDER AND PARANOID SCHIZOPHRENIA**

*Lead Author: Ignacio García-Cabeza, M.D.*
*Co-Author(s): Enrique de Portugal, M.D., Maria J Sánchez-Ayuso, Ph.D., Isabel Vicente, Ph.D.*

**SUMMARY:**
Aim of the study:
Investigate differences in the anomalies involved in the pathogenesis of delusion among patients with DSM -IV diagnosis of delusional disorder ( DD ) and paranoid schizophrenia (PS )
Methods :
Anomalies in 73 delusional and 70 schizophrenic patients were transversely evaluated with standarized instruments:
Cognitive biases:
- Attentional bias to threatening stimuli: Emotional Stroop: Threatening.
- Attentional bias to depressive stimuli : Emotional Stroop: Depressive .
- Jumping to conclusions bias: Experimental Beads Task (probabilistic reasoning task)
- Need for closure: Need for Closure Scale
- Attributional personalizing bias: Internal, Personal and Situational Attributions Questionnaire
- Attributional externalizing bias Internal, Personal and Situational Attributions Questionnaire.

Social cognition:
- Theory of mind: Faux-Pas Task (social sensitivity).
- Emotion facial recognition: Eyes Test..

Perceptive alterations (PA) → Cardiff Anomalous Perceptions Scale.
Emotional anomalies:
- Anxiety → Hamilton Anxiety Rating Scale .
- Depression → Beck Depression Inventory –II ).
- Self discrepancies → Personal Qualities Questionnaire
- Self-esteem → Rosemberg Self-esteem Scale .

The differences were controlled by sex, age, years of education, premorbid IQ, years of evolution, medication and positive - negative symptoms (according to PANSS ).
The relationship between delusional activity and the anomalies were examined using lineal regression models controlled by socio-demographic characteristics, premorbid IQ, negative symptomatology and neuropsychological function (attention, verbal learning, working memory and executive function).
Results:
The Delusional Disorder was significantly associated with a greater degree of attentional bias to threatening stimuli , anxiety , low self esteem and "self " discrepancies, as Paranoid Schizophrenia was significantly associated with a greater degree of jumping to conclusions and with greater deficits in social cognition.
Conclusion :
The influence of cognitive , perceptual and emotional factors involved in the pathogenesis of delirium influence differently in the TD than in the EP , which supports the idea that these are two distinct disease entities .

**NR3-081**

**STAGING PATIENTS WITH SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS ACCORDING TO THE CLINICAL GLOBAL IMPRESSION OF SEVERITY MADE BY CLINICIANS**

*Lead Author: María Paz García-Portilla, M.D., Ph.D.*
*Co-Author(s): García-Álvarez, L., Burón-Fernández, P., Díaz-Mesa, E., Al-Halabi, S., Sáiz, P. and Bobes, J.*

**SUMMARY:**
Introduction: Psychotic disorders, due to its biological, clinical and functional characteristics, are an ideal entity for obtaining benefits from a staging model.
Aims: This poster reported the preliminary results of a project aiming to develop a staging model for psychotic disorders based on artificial intelligence techniques. We present the patients´ characteristics in each of the 3 severity stages made by the clinicians according to their Clinical Global Impression.
Methods: Cross-sectional, naturalistic study. Inclusion criteria: DSM-IV diagnosis of psychotic disorders; age >17 years; and written informed consent given.
Results: 110 patients. Mean age 40.49 (10.28), 63.6% females. Patients were classified according to their CGI-S scores in mild (1-3), moderate (4), and severe (5-7). Psychopathology: Severe patients obtained statistically significant greater scores in PANSS and in 3 of its subscales (positive, negative, general), HDRS and NSA. Use of substances: A greater proportion of mild and severe patients used tobacco. Functioning: Severe patients obtained statistically significant lower scores in the PSP and EEAG. Quality of life: Severe patients obtained statistically significant worse scores in the SF-36 and in 6 of its subscales. Cognition: Severe patients obtained statistically significant higher scores in the SCIP.
Conclusion: The clinical staging made by clinicians using the CGI-S was based on psychopathology, functioning, quality of life and cognition. Physical health was not taken into account.

**NR3-082**

**DELUSIONAL DISORDER: CLINICAL VARIABLES RELATED TO A WORST OUTCOME**

*Lead Author: Petra Gento, M.Psy.*
*Co-Author(s): Ariadna Balague Psy.M., Joan Calvo Psy.M.,Victoria Olles Psy. M.,Ermitas Turnes Psy. M.*

**SUMMARY:**
Objective:
The aim of this study is to describe clinical correlates of delusional disorder (DD), pharmacological treatment used in our community, and the variables related with a worst outcome.
Method:
A cross-sectional study was conducted with a sample of 74 patients (F:44, M: 30 ) fulfilling DSMIV-R criteria for DD. Mean age: 60.8y. Variables evaluated included: marital status, age at clinical onset, duration of the disorder, time before treatment, family history of psychiatric disorders, premorbid psychopathol-

ogy, type of delusion, pharmacological adherence, antipsychotic drug, use of antidepressants (AD) and number of hospital admissions during the period of follow-up. The clinical recovery was evaluated with the Global Assessment of Functioning (GAF) and the Brief Psychiatric Rating Scale (BPRS) at the end of the study. T-test, $X^2$ test and ANOVA were performed for statistical analysis (SPSS)
Results:
Mean age of DD onset was 44.3 y. The most frequent DD types were persecutory (66.2%) and jealous (18.9%). The average follow-up period was 8.5 y. The mean time from the onset of DD was 16.4 y, and the average time before treatment onset was 7.6 y; 13.6% had a family history of schizophrenia, 9.5% had DD, and nearly 30% had alcohol dependence. Rate of paranoid personality disorder was 21.8% (higher among females $X^2$=24,6 p=.017 ), and rate of abuse of substances 15% (higher among males $X^2$=26,6 p= .010). 37.8% of the subjects had been taking AD during the follow-up. Most of the patients were taking second-generation antipsychotics (50%) or conventional antipsychotics 33.8%. The efficacy was very similar with all of them: partial response 43.2%, full response 45.8%, and no response at all 10.8%. The rate of treatment adherence was 90%. During the follow-up, 15 subjects (20.3%) were admitted to hospital, especially males $X^2$: 5,327 p=.021. The average hospital admissions were 0.83 among males, and 0.20 among females T=-2,24 p=.031.
Variables related with a worst outcome were: time from the onset of DD F: 10.474 p=.002, time before the onset of treatment F:5.620 p=.020 and number of hospital admissions F: 6.237 p=.015
Conclusions:
We found, like other authors (1) a significantly higher frequency of premorbid substance abuse among males, and a higher rate of paranoid personality among females. Like Manschreck et al (2) we found a high positive response to the antipsychotics, and no differences in outcome according to type.
The worst outcome related to time from DD onset and the time before treatment onset suggests that early detection could significantly improve the outcome of these patients.
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**NR3-083**

**INFLUENCE OF PSYCHOLOGICAL VARIABLES ON DURATION OF UNTREATED PSYCHOSIS**

*Lead Author: Mª Teresa Gonzalez-Salvador*
*Co-Author(s): Javier Irastorza M.D.,Margarita Alvarez-Prieto Ph.D.Marta Llavona-Serrano Ph.D.,Paz García-Benito M.D.,Pilar Rojano-Capilla M.D.,Rosa Gutiérrez-Labrador M.D.;*

**SUMMARY:**

The objective of this study was to evaluate the association of duration of untreated psychosis (DUP) with insight, coping strategies and dysfunctional personality patterns. DUP is defined as the period between the onset of symptoms of psychosis and the start of antipsychotic treatment. A cross-sectional design was employed, using validated categorical and dimensional scales in a sample of fifty patients with a DSM-IVTR diagnosis of paranoid schizophrenia consecutively treated at two mental health centres. Samples were analyzed using Pearson´s correlations followed by multiple regression analysis. Results:A positive association was found between DUP and avoidant personality pattern and a negative association was found between DUP and social support as a coping strategy. No significant associations were found between DUP and insight. Conclusion: Understanding the psychological mechanisms that can influence DUP may help shorten this period and improve the prognosis of paranoid schizophrenia.

**NR3-084**

**HYPOTENSION AS A TREATABLE FACTOR THAT IMPROVES QOL IN ANXIETY-DEPRESSION SPECTRUM DISORDERS, COMORBID WITH FYBROMIALGIA AND/OR CHRONIC FATIGUE SYND.**

*Lead Author: Cristian Y. Herrera, M.D., Ph.D.*
*Co-Author(s): Juan M. Ybarra MD Ph D*

**SUMMARY:**

Hypotension as a treat table factor that improves QOL in anxiety-depression spectrum disorders, co-morbid with fibromyalgia and or chronic fatigue synd
OBJECTIVES
Hypotension is currently thought to be a kind of “Life insurance”, by most physicians, however its impact on life quality, is seldom taken in account, when deciding whether to treat it or not. It is well established that hypotension is part of many Fybromialgia (FM) and Chronic Fatigue Syndrome (CFS) commonly coexist with anxiety and affective spectrum disorders, that are severe enough to merit treatment.
Our purpose has been to seek a rather physiological way to correct it both to improve the overall functioning and mainly psychopharmacological side effects tolerance and “augmentation like” better results of these treatments.
METHOD
15 Caucasian, middle and upper middle class (12 female and 3 males) outpatients were accepted to this open observational study, provided that their awakening Systolic BP, was 90mmHg or less, with and without syncope . And that their psychopathology and treatment were compatible with our hypothesis. Age range was from 16 to 65 y.
Treatment and or dietary changes were prescribed as either in the first three months (average) phenylalanine (PhA) (25 to 200 mg am ) supplements, plus increased fluid (1.5 l or more per day )and salt intake ( both added and as a part of of nutrients like cold cuts, olives, anchovies, etc.).
Later on, most patients were switched to a more protein and salty diet mainly at breakfast time, except for a vegetarian pt. and a non compliant one. therefore PhA became part of the diet, avoiding the nutritional supplement need.
RESULTS
All patients but the non compliant one (14 out of 15 ), increased their am Systolic BP to 100 or 110 mmHg. and referred a better and more energetic morning functioning and improved their treatment tolerance and response rate.
Best responses were related to the NA antidepressants as Duloxetine, Nortryptiline, Bupropion, etc
CONCLUSIONS
Addressing the no so positive sides of Hypotension, appears to be a source of better QOL (Quality Of Life), mainly in the early

morning, for these often refractory patients. Besides there seems to be a better tolerated response with low or moderate antidepressant doses. More formal and thorough research is obviously needed, in order to confirm these findings and define what kind of subgroups present co morbidities that may be more significant clinically in order to develop specific treatment strategies.

**NR3-085**

**RESULTS OF THE FIRST PSYCHOTIC EPISODE PROGRAM IN CATALONIA DURING 2010-2012**

*Lead Author: Esther Lobo*
*Co-Author(s): Trinidad Pelaez,Ph., B. Marzari,M., M. Nuñez,N., M. Coromina,M., S. Ochoa,Ph.D.*

**SUMMARY:**

INTRODUCTION: Mental disorders are the most frequent cause of disease in Europe. Around 3% of people experience a psychotic episode during their life. HYPOTHESIS:The teams of early intervention can help to achieve better detection, earlier intervention, better adherence and therefore functional improvement. METHODS:The program PAE-TPI started in several teams in Catalonia, one of this was in Mental Health Center of Cerdanyola (reference population 129.599). The team was composed by a psychiatrist, a psychologist and a nurse. The key aspects of the program are: detection strategies, assessment strategies and identification of cases at risk of developing psychosis or first episode-psychosis and intervention. Inclusion criteria of people attended in the program are: over 18 years old, High Risk Mental States, First Episode-Psychosis or Critical Period. RESULTS: During the three-year period 2010-2012 Indicators program was as follows :
Incidence :=10,20,21 new cases/100.000 inhab.
Prevalence in program =40,49,81, cases in the program/100.000 inhabits.).
High Risk Mental States:1'9,5,8 % of total cases.
First Episode-Psychosis:7'6,20,10'2 of total cases.
Critical Period:1,2'5,6'1 % of total cases.
Dropouts:10,2,6'1 % .
DUP :200,47,42 weeks.
Adherence to treatment :80,87,82 cases follow-up 12 months,
Cases with Functional Improvement follow-up 12 months (GAF):94,94,97 % cases.
Side Effects Detection (UKU):84,84,87 % cases.
CONCLUSIONS: The implementation of program improves the detection of new cases of people with psychosis in the early stages of the illness, increasing the rate of incidence and prevalence of the program. The rates of dropouts are low and the rates of adherence are higher in the three years of functioning of the program. The people included in the program have improved their functionality. The better assessment of the side effects could increases the rates of adherence to treatment.
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**NR3-086**

**EMOTIONAL DYSREGULATION IN ADHD AND BORDERLINE PERSONALITY DISORDERS ADULT OUT-PATIENTS**

*Lead Author: Mª Teresa Gonzalez-Salvador*
*Co-Author(s): Marta Pérez-Alvarez M.D., Pilar Rojano M.D.Ph.D., Teresa González-Salvador M.D Ph.D.*

**SUMMARY:**

Emotional dysregulation in ADHD and BPD adult out-patients
Introduction
Emotion dysregulation means deficits in the ability to modulate the experience and expression of emotions and to maintain goal directed behavior in the presence of intense negative affect .Also it is hypothesized to play a central role in the etiology and development of BPD. Emotion dysregulation is associated with interpersonal dysregulation and is an additional feature of ADHD that should be incorporated into theoretical conceptualizations and diagnostic criteria In the DSM-5 emotional dysregulation does not appear.
In a study by the Arganda´s MHC, 51 out-patients, with a diagnosis of ADHD and/or BPD.
Objectives
o Examine the disregulation emotional and neuroticism in BPD and ADHD adult patients.
Aims
o The proposal is that there exist any differences between both disorders respect to emotional dysregulation and neuroticism.
Methods
o Transversal descriptive study of out-patients with the following inclusion and exclusion criteria:
Inclusion Criteria
o Patients referred to Arganda´s MHC with a diagnosis of ADHD and/or BPD, > 17 years old, written informed consent.
o Exclusion Criteria
o Mental retardation, high suicidability, Schizophrenia, cerebral organic disorders, toxic substances
INSTRUMENTS:
•ADHD: ASRS-V1.1, ADHD RS., CAADID , WURS, reduced version.
•Emotional dysregulation :CAARS and DERS:
• BPD :SCID-II-DSM-IV.
•Neuroticism :NEO-PI-R
Results
A high comorbidity is observed with BPD and ADHD. Neuroticism is more frequently seen in BPD and emotional dysregulation in both patients.
Conclusions
ADHD is a disease observed in the adult population of out-patients with a high frequency of dysregulation emotional. Some similarities and differencies are commented between BPD and ADHD about emotional components.

**NR3-087**

**THERAPYGENETICS - POLYMORPHISMS IN THE MONOAMINE OXYDASE A (MAOA) GENE AND COGNITIVE BEHAVIOR TREATMENT OUTCOME IN A CLINICAL SAMPLE OF PANIC DISORDER**

*Lead Author: Evelyn Andersson*
*Co-Author(s): Catharina Lavebratt, Associated Professor, Nils Lindefors, Martin Schalling,, Erik Hedman, Christian Rück*
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**SUMMARY:**

Objective: The role of genetics for predicting the response to cognitive behavior therapy (CBT) for panic disorder (PD) has only been studied in a few previous investigations. MAOA is an enzyme that degrades amine neurotransmitters, such as dopamine, norepinephrine, and serotonin, all of which are concidered relevant in amygdala regulation and fear extinction, and therefore might be of relevance for CBT outcome. The aim of the present study was to investigate if any of these variants predicted response to CBT in a well- controlled clinical sample of PD patients.
Method: Participants were recruited from the worlds first regular Internet-delivered CBT unit in Stockholm, Sweden (N=198). Genotyping were performed on DNA extracted from blood or saliva samples. Effects were analyzed at follow-up (12 months after treatment) and post treatment. The main outcome measure was the Panic Disorder Symptom Severity Scale (PDSS).
Results: The preliminary analyses indicates an association of the MAOA polymorphism and CBT outcome of PD. However, these analyses needs further testing and details will be presented later.

**NR3-088**
**EFFECTS OF CHILDHOOD ABUSE ON ADULT OBESITY: SYSTEMATIC REVIEW AND META-ANALYSIS**
*Lead Author: Erik Hemmingsson, Ph.D.*
*Co-Author(s): Signy Reynisdottir, M.D., Ph.D.*

**SUMMARY:**
Background: Controversy exists surrounding to role of childhood abuse in adult obesity.
Methods: Meta-analysis of observational studies on the role of childhood abuse in adult obesity. Pubmed searches using the search terms “childhood abuse”, “childhood adversity”, “household dysfunction”, and “obesity” were carried out, resulting in 20 cohort studies with n=88528 participants (4 prospective and 16 retrospective), with 43 unique comparisons of four different adversity types (10 physical, 9 emotional, 11 sexual, and 13 general). Four studies reported dose-response effects with 9 unique comparisons of no abuse, light/moderate abuse, and severe abuse. A random effects model was used to quantify effect sizes.
Results: Overall, adults who reported being exposed to childhood abuse were significantly more likely to develop obesity than adults who reported no childhood abuse (OR: 1.39, 95% CI: 1.28-1.52, P<0.001). All four investigated types of abuse were significantly associated with adult obesity: physical abuse (OR: 1.38, 1.21-1.56), emotional abuse (OR: 1.46, 1.10-1.93), sexual abuse (OR: 1.31, 1.08-1.60) and general abuse (OR: 1.45, 1.25-1.69). Severe abuse (OR: 1.50, 1.27-1.77) was significantly more associated with adult obesity compared with light/moderate abuse (1.13, 0.91-1.41), P=0.043. There was no difference in obesity association between prospective (OR: 1.68, 1.30-2.17) and retrospective studies (OR: 1.36, 1.24-1.52), P=0.14.
Conclusion: There was a consistent and robust association between all investigated types of childhood abuse and adult obesity, including a significant dose-response association. These findings suggest that childhood abuse, followed by emotional, psychological, behavioural, inflammatory and stress-related perturbations, may be a critical root cause of obesity.

**NR3-089**
**SCHIZOPHRENIA CHANGES THE TONAL SYSTEM IN PATIENTS WHO SPEAK TONE LANGUAGES**
*Lead Author: Chiao-Li K. Ke, M.D.*
*Co-Author(s): Shih-Tsung Cheng, M.D., Wi-Vun T. Chiung Ph.D.*

**SUMMARY:**
Objective: Word meanings and lexical referents are distinguished by having different pitches or pitch contour in tone languages, which are spoken by more than half of the world’s population. Pitch-related manifestations such as monotonous speech in schizophrenia may impact tonal system and results in more language difficulties in tone language-speaking patients.
Method: We used computer-assisted acoustic measurements and analysis to examine fundamental frequency (F0) of seven Taiwanese tones in thirty patients and thirty normal subjects (age and gender matched controls). Word-reading list consisted of all possible combinations of every two Taiwanese tones in a bi-syllabic word, totaling to a set of 49 bi-syllabic words. Only the last syllable of each bi-syllabic word was extracted. The multivariate analysis of variance (MANOVA) was used to analyze time-normalized F0 values achieved by reducing the raw F0 contour to eleven equidistant points along the time-axis. The independent variables included dichotomized variables of group, gender and their interaction.
Results: Significant statistical difference in F0 of tones between patient and control groups was demonstrated (p<0.0001). Significant difference (also p<0.0001) in F0 of tones between male and female genders, which represented sexual distinction in the voice organs, demonstrated the internal validity of our experimental design. The interaction of group (schizophrenia and normal control) and gender (male and female) variables were also found to be statistically significant (p<0.0001), indicating that the disease process of schizophrenia may exert dissimilar effects on the tonal system of male and female genders.
Conclusions: We concluded that tonal system in tone language-speaking patients is affected by schizophrenia, which may further complicate their speech difficulties.

**NR3-090**
**ATTITUDES OF PSYCHIATRISTS TOWARDS DIAGNOSIS AND TREATMENT OF ATTENTION DEFICIT/ HYPERACTIVITY DISORDER IN ADULTS: A SURVEY FROM TURKEY**
*Lead Author: Umut M. Aksoy*
*Co-Author(s): Ozge Doganavşargil Baysal, Şennur Günay Akso, Ph.D. , Ali Evren Tufan, M.D., Fulya Maner, M.D.*

**SUMMARY:**
Objective: An explanatory study without a priori hypothesis was planned because of lack of information about Turkish psychiatric attitude toward Adult ADHD diagnosis.
Material/Method: A questionnaire was mailed to all informed participants. The percentage of adult adhd diagnosis in the biggest and oldest psychiatry hospital in Turkey within a year were calculated from hospital records, the results were compared with other studies.
Results: Half of participants displayed negative attitudes towards psychostimulants . .%40 reported that prescribing stimulants was a chore, also 40 % reported their fear of abuse potential . 40 % reported prescribing a non-stimulant agent. A majority of participants were ambiguous on the prevalence of ADHD. The records of general psychiatry outpatient setting

revealed only 4 patients diagnosed as Adult ADHD ,leading to a percentage of 0.002 %.
Conclusion: The results reflect an urgent need for education in psychiatry about Adult ADHD diagnosis and treatment.

**NR3-091**

**SOCIODEMOGRAPHIC, FORENSIC AND PSYCHIATRIC STATES REGARDING INDIVIDUALS COMITTED HOMICIDE TO THEIR PARENTS (THE PRODIGAL SON SYNDROME )**

*Lead Author: Nihat Alpay*
*Co-Author(s): İsmail Özver MD, Cagatay Karsıdag MD, Umut Mert Aksoy, Nesrin Buket Tomruk MD*

**SUMMARY:**

Aim:This descriptive study aimed to demonstrate sciodemographic, forensic and psychopathological states of individuals comitted homicide to their parents and investigate hypothetical relationship of homicide with mental illnes.
Methode: The individuals commited homicide were examined which were sent by court for forensic psychiatric examination in National Forensic İnsttitute of Turkey in order to evalute the criminal capacity of the individulas. The cases recorded between 2008-2013 were evaluated with psychiatric examination and psychometric instruments included projcetive tests – rorschach and Wechlser Adult İntelligence Scale .İndividuals demonstrating psychiatric disorders were re- evaluated according to DSM IV –R criteria .
Findings : 102 cases were evaluted.Mean age were 31.%6.9 of individulas were alettered, %3.9 lettered, %19.6 were graduated from primary school %50 were graduated from middle or high school. %50 cases were unemployed.% 18 of cases were diagnosed schizophrenia , %5.9 of cases were diagnosed having bipolar disorder. %58.0 of cases had a psychiatric history.%99 of indviduals were smokers, %39.8 of cases consumated alcohol and %29 of cases were using illicit substances.
Result: Most of the individuals commited homicide to their parents were adults however some cases in children age group were observed because of incestious relations and child abuse by their parents.Our findings supports the data available in literature regarding age.İn psychiatric literature mostly major mental disorders like schizophrenia and other psychotic disorders were discussed.
“Paricide “ defined as an umbrella term in literatur encompassing wide psychiatric disorders including schizophrenia, schizoaffective disorder, bipolar disorder, personality disorders, organic mental disorders based on history of former head traumas, all of them were accused for it.%75 of our cases however did not demonstrate a major mental disorder and they have been sentenced to have criminal capacity.Most of the homicide cases were thought to exist as a result of personality pathologies and impulsive acts related impulse control.
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**NR3-092**

**FAMILIAL LIABILITY, THE BDNF-VAL66MET POLYMORPHISM AND PSYCHOTIC-LIKE EXPERIENCES**

*Lead Author: Koksal Alptekin, M.D.*
*Co-Author(s): Tolga Binbay, M.D., Hayriye Elbi, M.D., Nesli Zağlı, Hüseyin Onay, M.D., Ferda Özkınay, M.D., Jim van Os, M.D. PhD, MRCPsych*

**SUMMARY:**

Background/Objectives:
Familial liability to both severe and common mental disorder predicts psychotic disorder, psychotic symptoms and psychotic-like experiences (PLe). However, the relation between familial liability and psychosis outcome may be associated with genetic variation. We investigated the influence of familial liability on PLe in a nonpsychotic, general population based group, and the potential moderating effect of the BDNFVal 66Met polymorphism.
Methods:
PLe and familial liability were assessed in 313 individuals (mean age 38.6±13.3; gender: 43% males). Familial liability was obtained using the questions from Family Interview for Genetic Studies and dichotomized to none or at least one mental disorder in the first degree relatives (parents and siblings). PLe (visual and auditory hallucinations) were assessed through relevant questions in CIDI 2.1 G section on psychotic disorders. The sample undergone clinical reinterviews with the Structured Clinical Interview for DSMIV. BDNF val66met (rs6265) was genotyped using standardized procedures.
Results:
Familial liability was associated with PLe (OR= 1.8; CI: 1.1-3.0; p: 0.012). The association between familial liability and PLe was significant in individuals with Val/Val allele (OR= 2.2; CI: 1.2-4.1; p: 0.009) whereas there was no evidence for an association between familial liability and PLe in Met carrier individuals.
Conclusion:
Individuals with a familial liability for mental disorders are more likely to report PLe. Val/Val genotype reported more PLe when exposed to familial liability than did individuals carrying Met allele. Therefore, the observed gene-environment interaction effect may be partially responsible for individual variation in response to familial liability.

**NR3-093**

**THE RELATIONSHIP BETWEEN WORKING MEMORY AND EXPRESSED EMOTION IN ONE DEGREE RELATIVES AS CAREGIVERS OF PSYCHOTIC PATIENTS**

*Lead Author: Pınar Eraslan*
*Co-Author(s): Cankurtaran ES,M.D., Kaymak SU, M.D., Soygür H, M.D., Atbasoglu C,M.D.*

**SUMMARY:**

Introduction: In this study, it is hypotesized that the working memory of the relatives of psychotic patients were correlated directly with their expressed emotions as a caregiver when

their subsyndormal psychotic symptoms, their temperament and characters, caregiver burdens and the psychotic symptom severity of the patients were excluded.Methods: Eigthyfive patients diagnosed with schizophrenia/schizoaffective disorder and 35 patients with affective disorder with psychotic depression/ mania were included. Primary caregivers of these patients (n=120) were mothers (n=52), fathers (n=27), brother or sisters (n=34) and children (n=7). Brief Psychiatric Rating Scale and Clinical Global Impression scales were given to the patients. The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Expressed Emotion Scale, The Temperament and Character Inventory (TCI), Scales for Physical and Social Anhedonia, The Magical Ideation Scale and Zarit Caregiver Burden Interview were completed by the caregivers. The working memory was measured by the Auditory Consonant Trigram Test (ACT). Results: Expressed Emotion Scale scores of caregivers was negatively correlated with ACT (r= -,25; p=0,00). The variables statistically significantly and negatively correlated with the ACT were Scale for Social Anhedonia (r=-.34 ;p=0,00), Magical Ideation Scale (r= -,23; p=0,00), Physical Anhedonia Scale (r= -,19; p=0,03), TCI-Harm Avoidance (r= -,31; p=0,00).TCI-Self-Transcendence (r= ,23; p=0,00) ve TCI-Cooperativeness (r= ,20; p=0,02 are positively correlated with ACT. When brothers and sisters were excluded to achieve genetically 1. degree relatives (n=86), the correlation was not statistically significant anymore (r=- 0,89, p=.414). When the psychosis patients were splitted to schizophrenia and bipolar group, the correlation between the ACT and the Expressed Emotion Scale was still statistically non-significant for the 1. degree relatives. A stepwise regression analysis was conducted to predict which of the correlated factors affecting Expressed Emotion Scale independently. Stepwise regression analyses showed that only the Zaritt Caregiver Burden Interview (beta: 0.355, p<0.01), TCI Harm avoidence subscale (beta: 231, p<0.01) and CGI global improvement (beta: 237, p<0.01) were dependently related variables to Expressed Emotion. Conclusion: The working memory has been concluded as the core deficit of the psychotic disorders especially for the schizophrenia. Meanwhile working memory deficits has also been searched as an endophenotype for psychotic disorders. In this study, the working memory of the relatives of psychotic patients were negatively correlated with expressed emotion of relatives but not correlated when only 1. relatives were included in the analysis. Although we hypothesized that expressed emotion could be an endophenotype candidate and has a strong correlation with working memory, this hypothesis is not proved to be true in this study.

**NR3-094**

**DOES THE AGE OF BEGINNING PRIMARY SCHOOL AFFECT ATTENTION DEFICIT HYPERACTIVITY DISORDER SYMPTOMS?**

*Lead Author: Sebla Gökçe, M.D.*

**SUMMARY:**

Objectives: Attention-deficit/hyperactivity disorder (ADHD) is one of the most common diagnosis for children and adolescents, although the reported estimates for prevalence are extremely variable worldwide. In this study, in a community sample of children, we aimed to screen the presence of Attention Deficit Hyperactivity Disorder (ADHD) symptoms, and the interrelation of ADHD with sociodemographic variables in a sample of Turkish students.
Methods: The study population was composed of 4255 school age children from 1st and 2 nd grades in all primary schools in Kadikoy-Istanbul. Using systemic random sampling method, sociodemographic data of children and their families were collected from teachers by sociodemographic data form, and ADHD symptoms were evaluated by ADHD Rating Scale-teacher form (ADHD-RS).
Results: According to ADHD-RS results 746 (17.5 %) children were found to be in the range of ADHD risk. Among the children in the ADHD risk group; male/female ratio was 1.92/1; %59.2 of children were in the 1 st grade, and %40.8 were in the 2 nd grade of school; %61.3 of children had a kindergarden training; frequencies of education level of mothers were found to be %3.5 nonliterate, %27.1 primary school, %10.0 secondary school, %28.8 high school, and %29.7 higher than high school; frequencies of education level of fathers were found to be %2.1 nonliterate, %22.0 primary school, %13.4 secondary school, %31.1 high school, and %30.0 higher than high school.
Conclusions: As a result, we concluded that the age of beginning primary school and education degree of parents affects the syptom severity of ADHD.

**NR3-095**

**MAJOR DEPRESSION, CHILDHOOD TRAUMA AND SEXUAL DYSFUNCTION IN PTSD (POSTTRAUMATIC STRESS DISORDER)**

*Lead Author: Oğuz Karamustafalıoğlu, M.D.*
*Co-Author(s): Ömer Akil Özer MD , Esra Özdil MD, Atilla Tekin MD*

**SUMMARY:**

Objective: To compare PTSD patients in two groups ,PTSD with and without comorbid depression , regarding to sexual dysfunction and childhood trauma.
Method: 28 outpatients, whom applied to Şişli Etfal Teaching and Research Hospital( in Istanbul Turkey) anxiety disorders outpatient clinic between February 2008 and March 2011 were taken into the study. They were diagnosed as PTSD after evaluation with SCID-I (The structured Clinical Interview for DSM-IV Axis I Disorders) according to DSM-IV-TR criteria They were also rated by ASEX (Arizona Sexual Experience Scale), Childhood Trauma Questionnaire and a Sociodemographic Form.
Results: Comorbid major depression in PTSD patients is determined as % 57.1 (n=16). At least one childhood trauma reported in %71.4 of PTSD patients. In PTSD patients with depression, there have been statistically significant higher rates in physical abuse, emotional abuse and emotional neglect, compared to PTSD patients with no depression (respectively p=0.037, p=0.002, p=0.024).
On the other hand, there has been no significant difference in physical neglect and sexual abuse between two groups. Also there was no significant difference between the ASEX scores of two groups.
Conclusion: Major depression is the most frequent comorbid disorder
in patients with childhood trauma. In management of PTSD patients with comorbid depression, childhood trauma should be considered more carefully.
Keywords: childhood trauma, depression, posttraumatic stress disorder

**NR3-096**

**PRE AND POST TREATMENT SERUM BDNF LEVELS IN ACUTE MANIA: COMPARISON OF ECT AND ATYPICAL ANTIPSYCHOTIC TREATMENT ON BDNF**

*Lead Author: Nesrin Karamustafalioglu, M.D.*
*Co-Author(s): Murat Emul M.D., Abdullah Genc M.D., Sait Incir M.D., Tevfik Kalelioglu M.D., Akif Tasdemir M.D., Gökhan Umut M.D.*

**SUMMARY:**
Aims:
Deficiency of brain derived neurotrophic factor (BDNF) is suggested to have role in pathophysiology of bipolar disorder (BD) whether as a contributor or as a result (Tramontina 2009). Decreased serum BDNF levels in BD patients in manic as well as in those with depressive symptoms have been reported which were being normalized in euthymia (Yatham 2007). We aimed to compare , serum BDNF levels in patients with bipolar disorder who were in manic episode with healthy controls and to assess the influences of two different treatment modalities (ECT+antipsychotic or antipsychotic use only).
Methods: In this randomised control study, the patients with BD diagnosed according to criteria of DSM IV-TR, were divided into two groups : anti-psychotic treatment arm (n=46; standardized as haloperidol 10-30mg/daily + quetiapine 100-900 mg/daily) and ECT arm (n=22; standardized as haloperidol 10-30mg/daily + quetiapine 100-900 mg/daily + ECT). The blood samples for BDNF were drawn in the pre and post-treatment periods who reached remission according to YMRS (<12 points).
Results: Initial serum BDNF levels of patients with acute mania was significantly lower than healthy controls (2.47±2.31 vs 4.88±4.37, p=0.007). The initial BDNF level between ECT arm or AP arm was not significant (p=0.383). The BDNF level was significantly decreased after reaching remission in patients with acute mania (2.47±2.31 vs 2.25±1.91, p=0.011). The change in BDNF level was not significant after treatment in AP arm (p=0.082) while significant decrease was detected in ECT arm (p=0.035).
Conclusion:
Consistent with the literature, we have found lower serum BDNF levels in acute mania compared to healthy controls (Tramontina 2009). However, serum BDNF levels significantly decreased after ECT treatment in acute mania.. This contraversial finding was difficult to discuss with the current literature, while there was no evidence on BDNF level after ECT treatment in mania. In a study, no changes in the serum BDNF level before and after the ECT treatment in depression was reported (Fernandes 2009). Thus, we speculated that the clinical improvement following ECT in mania may not be related with changes in the BDNF.
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**NR3-097**

**MALINGERING AMONG MALE ARRESTED AND CONVICTED CASES INTERNALIZED FOR PSYCHIATRIC TREATMENT**

*Lead Author: Nihan D. Ljohiy, M.D.*
*Co-Author(s): Mehmet C. Ger, M.D., Fatih Oncu, M.D. Assoc. Prof., Guliz Ozgen, M.D. Assoc. Prof., Ahmet Turkcan, M.D.*

**SUMMARY:**
HYPOTHESIS:The study is planned to determine the predictive variables of malingering, secondary gains, the clinical properties of malingerers and the effectiveness of the diagnostic tools used in our country to detect malingering. The study's results should facilitate to clarify situations and clinical evaluations for the clinicians, where they should pay attention.
METHODS:The study includes 70 arrested and convicted male cases internalized for their treatment to the high security ward of the forensic psychiatry unit at the Bakirkoy Research and Training Hospital for Psychiatric and Neurological Diseases. An interview form of the unit to identify sociodemographic, clinical and criminal factors, Structured Clinical Interview for DSM-IV Disorders (SCID I), Structured Clinical Interview for DSM-III–R (SCID II), Minnesota Multiphasic Personality Inventory (MMPI), Symptom Check-list (SCL-90-R), Rey Memory Test and Taylor Violence Rating Scale are applied. Malingerers and nonmalingerers are compared. Two independent clinicians, without being part of the study made the evaluation of the cases and diagnosed malingering.
RESULTS: The frequency of malingering among the cases was 44.3%, 52.9% of the arrested cases reported psychotic like symptoms and 42.9% of convicted cases reported depression like symptoms. The most common reasons for the internalization were due to the suicidal ideation (35.5%) and suicide attempts (32.3%). 80.6% of malingerers had no Axis-I diagnosis and 77.4% had an Axis-II diagnoses by the admission. 64.5% of those had been identified as Antisocial Personality Disorder. If Axis-I and Axis-II factors were ignored, other variables alone were found out to be not predictive to determine malingering. Minnesota Multiphasic Personality Inventory was not effective in detecting malingering. According to Rey Memory Test malingerers had lower performance statistically significant when compared with the nonmalingerers (mean 13.33 ± 2.22). In SCL-90-R; psychotic symptom and paranoid symptom subscale scores were both correlated negatively when compared to the Rey Memory Test scores in malingerers.
CONCLUSIONS: Besides the difficulties of diagnosis, malingering is a condition containing both medical and legal risks for the physicians, to be aware of. In this study, the malingerers were significantly more likely to carry a diagnosis of antisocial personality disorder, have demands because of the secondary gains and report psychotic like or depression like symptoms. The most common reasons for the internalization of them were due to the suicidal ideation and suicide attempts. We found that only the Rey Memory Test is effective in detecting malingering among the a few diagnostic tools used in our country.

There are valid instruments used in other countries for this purpose. In daily practice, psychiatrists will benefit so much by the adaptation of these tools in Turkish.

**NR3-098**

**AN EVALUATION OF THE USE OF OLANZAPINE PAMOATE DEPOT INJECTION IN TREATMENT-RESISTANT, VIOLENT SCHIZOPHRENIA PATIENTS IN A UK HIGH SECURITY HOSPITAL**

*Lead Author: Mrigendra Das, M.D.*
*Co-Author(s): Nina Baruch, M.D.; Amlan Basu, M.D.; Fintan Larkin, M.D.; Callum C. Ross, M.D; Samrat Sengupta, M.D.; Amit Sharda, M.D.; Susan Young, Ph.D.*

**SUMMARY:**
Oral olanzapine is efficacious in schizophrenia. Depot Olanzapine pamoate (DO), which was recently licensed, may help in improving compliance, but it is expensive and carries risk of post-injection syndrome.
We report a case series of the use of DO in treatment resistant schizophrenia patients in a UK forensic high security hospital with significant violence histories, who posed the highest risk to others. Outcome measures included Clinical Global improvement, seclusion hours, violent incidents, engagement in therapeutic work, progression to less-secure conditions, side effects, metabolic parameters.
Eight patients were treated with DO. The switch to DO took place because of non response to previous antipsychotic treatment. The dose range was 150-405 mg/2 weekly and the duration of treatment range was 14 weeks- 24 months. Six showed an improvement in symptoms as reflected by reduction in CGI severity. All the patients who showed clinical improvement had an associated decrease in violence, number of incidents and seclusion hours; and an improvement in clinical engagement.
In the author's knowledge this is the first report of DO in forensic psychiatric patients. All patients who responded symptomatically to DO also showed a decrease in violent behaviour. The potential anti-aggression effects of DO in this patient group may represent a very important area for further work.

**NR3-099**

**GASTROINTESTINAL SYMPTOMS IN CHILDREN WITH AUTISM SPECTRUM DISORDERS**

*Lead Author: Caridad Benavides, M.D.*
*Co-Author(s): Luis Guerra, M.D., Elena Rubio, M.D., Mara Parellada, D.M.*

**SUMMARY:**
Introduction: Gastrointestinal symptoms are common in patients with autism spectrum disorders (ASDs) although their prevalence is not well established. These individuals generally have difficulties in expressing discomfort or pain. The aim of this study was to describe the frequency of gastrointestinal symptoms in these patients.
Methods: Retrospective review of clinical records of patients with ASDs who were part of a Service of Integrative Medical Attention for People with Autistic Spectrum Disorder (AMITEA) and sent to Pediatric Gastroenterology Service (PGES) from January 2005 to August 2013. We collected epidemiological variables represented by the median and average, and clinical variables represented by frequencies and percentages.
Results: There were 73 patients with ASDs attending to PGES. Of these, 72,6% were males. At first, clinical assessment patients age ranged from 2 to 15 years old (median age 7 years old), weight-for-age z-score average was 0,88 and height-for-age z-score average was 0,79. We found that 63% of patients were under concomitant psychiatric medication (41% neuroleptics, 15,1% antiepileptics, 13,7% benzodiazepines). Common presenting complaints were constipation (21 patients; 30,15%), abdominal pain (28,8%) and diarrhea (16,4%). Other presenting complaints were food intolerance (12,3%) and behavioral changes or irritability (6,8%). Constipation (29 patients; 39,7%), abdominal pain (13,7%) and gastro-esophageal reflux disease (GERD) (12,3%) were the most prevalent specific gastrointestinal disorders. Ten patients had some kind of food intolerance (13,7%), four of them were IgE-mediated food allergy and just one had celiac disease (1,4%). We found 3 cases of obesity (4,1%) and 3 cases of mild malnutrition (4,1%).Five patients had encopresis (6,8%), four of them associated with constipation. Diet and life-style changes were recommended in 54,8% of patients. Laxatives were the most prescribed drugs (41,1%). Other medications prescribed were antimicrobials (21,9%) in parasitic disease and bacterial overgrowth syndrome and Proton-pump inhibitors (19,2%) in GERD and gastritis. Of those patients with abdominal pain as presenting complaint, twelve (57,1%) had constipation as specific gastrointestinal disorder. Of those patients with constipation as specific gastrointestinal disorder, twenty-seven received laxatives (97%) and diet and life-style changes were recommended to 25 (86%). Twenty of them (68,9%) were under concomitant psychiatric medication, fifteen received neuroleptics (51,7%).
Conclusion: Constipation and abdominal pain were the most common presenting complaints. More than 50% of the patients with constipation were under concomitant psychiatric medication that can lead to or worsen this problem . Many of the patients derived to Gastroenterology service, also had behavioral disorders. A deeper study about co-morbidity in this type of patients it is needed.

**NR3-100**

**POST-TRAUMATIC STRESS DISORDERS IN COLOMBIAN CHILDREN: ACUTE PHASE AND TEN-YEAR FOLLOW-UP**

*Lead Author: Ruby C. Castilla-Puentes, D.P.H., M.B.A., M.D.*
*Co-Author(s): Ivan S. Gomez, M.D.,Sandra R Castilla-Puentes, M.D., Wilma I Castilla-Puentes, M.D., Carlos A. Sanchez-Russi, Ph.D., Miguel Habeych, M.D., M.P.H.*

**SUMMARY:**
Background: To our knowledge, few studies have addressed prospectively post traumatic stress disorders (PTSD) among children exposed to traumatic events in Colombia. A mass shooting resulting in murder of two men by gunmen driving motorcycles in a busy park from Belen, Boyaca, Colombia has provided a unique opportunity to study acute-phase and ten-year follow-up of children responses to a this type of traumatic experience.
Objective: This report describes a month and 10-year follow-up study of children exposed to a mass shooting incident.
Methods: Diagnostic Interview Schedule/Disaster Supplement and SCARED (parent and child versions) were used to assess 293 children (183 girls and 110 boys) of 8 to 18 years of age (mean age 13 years). Data on family history of anxiety disorders was also collected. Measures at 1-2 months and again ten year

later, with an 69% reinterview rate.
Results: In the acute postdisaster period, 32.8% of children reported PTSD symptoms, and in 82.6% of all subjects SCARED scores were >=25. At follow-up, 24.6% of children reported symptoms of PTSD while scores >=25 on the SCARED scale was detected in 42.4% of subjects. There was a positive correlation between SCARED scores and PTSD symptoms in both acute phase and follow-up. Parent-history of anxiety disorders was the best predictor of presence and persistence of PTSD.
Conclusion: Children with family history of anxiety may be most vulnerable to developing PTSD and therefore may deserve special attention from mental health professionals. Intervention programs for children need to take into account familiar and cultural aspects, as well as characteristics of the communities involved.

**NR3-101**

**ASSESSING MENTAL HEALTH RISK FACTORS AMONG FEMALE PRISONERS IN QUITO-ECUADOR: A CROSS-SECTIONAL STUDY**

*Lead Author: Maria L. Eguiguren, M.D.*
*Co-Author(s): Michelle Grunauer, M.D., PhD., Amiee Miller, MSW.*

**SUMMARY:**

Background: Rates of mental disorders in female inmates are higher than those of male prisoners and the general population. However, the literature available regarding this phenomenon is limited. To our knowledge, there are no studies in Ecuador assessing the risk factors and prevalence of mental health problems in female inmates.
Objectives: Our objectives were to identify the prevalence of mental health problems and its associated risk factors in Quito's Female Social Rehabilitation Center (women's prison).
Methods: We studied the relationship between socio-demographic, maternity and confinement information and mental health difficulties in the women's prison. We collected data from all the inmates (n=220) of the female prison in Quito. The Goldberg General Health Questionnaire was used to identify the prisoners with mental health difficulties. A second survey was used to collect general subjects' information, including socio-demographic, maternity and confinement data.
Results: The prevalence of mental health problems among the female inmates was 77.1%. Mental health disorders were associated with being born in Pichincha, the province where the prison is located (p = 0.03), being under 25 years (p = 0.018), not having a sentence (p = 0.032), and having a time of imprisonment less than 3 months (p = 0.005). The independent risk factors found after running a multivariate logistic regression model were having less than 25 years of age (p = 0.034) and less than 3 months of imprisonment (p = 0.043).
Conclusion: This is the first study in Ecuador evaluating the association between socio-demographic, maternity and confinement information and mental health problems in the women's prison. The prevalence of mental health difficulties in female inmates doubled that of general Ecuadorian population. The independent risk factors associated with mental health disorders were being newly imprisoned (less than 3 months) and youth (less than 25 years old). These findings have important implications in terms of identifying high-risk patients among prisoners, who will benefit the most from early intervention.

**NR3-102**

**COMPARED TO OTHER MEDICAL SPECIALTIES, PSYCHIATRIC RESEARCH IS FAIRLY WELL REPRESENTED IN RECENT SCIENTIFIC LITERATURE FROM AFGHANISTAN**

*Lead Author: Mohammad A. Ghairatmal*
*Co-Author(s): Najeeb Ur Rahman Manalai, M.D., Mohammad Kaihan Ghairatmal, M.D., Partam Manalai, M.D*

**SUMMARY:**

Introduction: After involvement of the international community in Afghanistan, the state of biological research has substantially improved in Afghanistan. As a measure of such improvement, here we have looked at the Pubmed indexed articles to assess psychiatric research in Afghanistan.
Hypothesis: Since trauma and suffering have received international attention, compared to other medical specialties research addressing psychiatric disorders in Afghan population should be higher.
Methods: We searched Pubmed database with key words (alone and combinations) "Afghanistan"; "Afghan"; "mental Illness"; "Substance"; "Opium"; "Heroin"; "PTSD"; "Posttraumatic Stress disorder"; and "Suicide" with a yield of over 3800 articles. Abstracts of the articles were reviewed for their classification: whether they were about foreign military forces in Afghanistan or about Afghan people (both living in native land as well as immigrants).
Results: After the intervention of international community, the literally contribution to the biological knowledge originating from Afghanistan has been significantly higher compared that of the neighboring countries or similar. Compared to Nepal, Iraq, and Tajikistan, the number of articles originating from Afghanistan data from 2002-2013 has significantly increased (p=0.0005, p=0.0032, and p=0.0001 Nepal, Iraq, and Tajikistan respectively). Of over 3800 articles, 1232 articles were about Afghanistan and/or Afghan people. Afghan researchers have been increasingly taking active role. Compared to 1969 – 2001 period, in 2002-2013 period there has been a 16-fold increase in articles first authored by an Afghan researcher that is about Afghan people. Most commonly addressed illness is PTSD about 500, 45 were addressing issues related to Afghan population (of which 21 were about Afghan refugees in other countries). The least number of articles on important psychiatric topic were on suicide: from 2002 to 2013, there were only 3 articles addressing suicidal ideations in Afghan population.
Discussion: After the fall of the Taliban, a large number of Afghans have the opportunity to be educated in the western countries and or work with organizations with scientific research experience. To our knowledge, there are no studies that systematically evaluate the state of medical literature in Afghanistan. The output of medical literature on illnesses in Afghanistan has been sporadic and dependent of a person or a group's individual's preference (especially poliovirus, maternity related issues). Security and financial difficulties along with lack of experienced personal make such research challening in Afghanistan.
Conclusion: Despite all the limitations and obstacles, the assistant of international (USA in specific) has helped Psychiatric research and literature improvement, and a promising future of well developed psychiatry in Afghanistan

**NR3-103**

**OUT REACH TO CLERGY, ELDERS, AND TRIBAL LEADERS MAY BE A COST EFFECTIVE METHOD TO REDUCE THE BURDEN OF OPIOID USE IN AFGHANISTAN**

*Lead Author: Mohammad K. Ghairatmal, M.D.*
*Co-Author(s): Partam Manalai, M.D., Mohammad Ayan Ghairatmal, M.D., Najeeb Ur Rahman Manalai, M.D.*

**SUMMARY:**
Introduction: The trend in opium production in Afghanistan continues upward. According to the 2013 United Nation Office of Drug and Crime report, Afghanistan was the largest supplier of opium in the world with potentially producing 5,500 tons of opium in 2013, a 46% increase from 2012. Poppy trade accounted for 4% of GDP in 2013. Less than 0.001 % of agricultural land of Afghanistan (668 – 919 square miles) was devoted to poppy cultivation in 2013. Thus, if the trend continues, Afghanistan has the potential to produce large amounts of opium. High price of opium, readily available international clientele, devotion of small piece of land to a large profit in a short season are among the reason that makes cultivation of poppy attractive. This upward trend is more likely to increase opium/opioid dependence in Afghan population (as well as global community): opiates use by Afghans has increased 30-folds from 2001 to 2012. Thus identifying methods that will decrease opioid use by Afghans is of paramount public health interest. Hypothesis: compared to forced eradication strategies; educating the influential parties will be more effective in reducing the burden of opiate use disorders in Afghanistan. Method: Data from United Nation Office of Drug and Crime (UNODC) reports along with finding from Najeeb Manalai's research (expert on poppy reduction programs in Afghanistan) were utilized. We analyzed the trend in reasons for not cultivating poppy plants over the past decade to determine the potential protective measures. Results: In the first half of the past decade, influential figures in rural Afghanistan (tribal leaders, elders, and clergy) were paid for their efforts to eradicate poppy cultivation. This effort resulted in increased number of poppy-free provinces. However, with worsening in security conditions and shift in international methodology regarding poppy cultivation in Afghanistan, the financial incentives to enforce eradication have dwindled and more provinces have started to cultivate increasingly larger amount of the poppy plants. Although more farmers are cultivating poppy, there is increase in the number of farmers that have voluntarily stopped poppy cultivation for religious and social reasons (e.g. human suffering).Discussion: Since the shift in global stance on forced-eradication of poppy plants in Afghanistan is likely to increase opium production, the plight of opioid addiction is likely to spike even higher than current level in Afghanistan. Conclusion: Historically influential figures have played an important role in both promoting and prohibiting opium culture. Financial incentive to the influential figures for their efforts may reduce the opium production (and use) temporarily but may result paradoxical effect in long-term. Programs to educate influential figures may result in long-lasting effects and be the most cost-effective methods.

**NR3-104**

**SWITCHING FROM RISPERIDONE LONG-ACTING INJECTION TO PALIPERIDONE PALMITATE LONG-ACTING THERAPY: A POST-HOC DATA REVIEW AND ANALYSIS**

*Lead Author: Srihari Gopal, M.D., M.H.S.*
*Co-Author(s): Shanker Thiagarajah, BSc, MB ChB.1., Michelle Busch, RN, BSN.2., Larry Alphs, MD.3., Danielle Coppola, MD.2., Ludger Hargarter, MD.4., José A.B. Vidal, MD.5., Bart Remmerie, Chem. Eng.6., Mahesh N. Samtani, PhD.2., Fan Zhang, MD, PhD.7., Adam Savitz, MD, PhD.2., David Hough, MD.2., Andreas Schreiner, MD.4.*

**SUMMARY:**
INTRODUCTION
Switching between different antipsychotic (AP) regimens (or administration routes) is common in clinical practice, often for reasons of insufficient treatment response, safety/tolerability issues, or patient/physician preference. During treatment transition, close clinical monitoring of patients is required because patients are vulnerable to symptomatic relapses consequent to disease course or delay in achieving therapeutic response to new AP. Paliperidone palmitate (PP) is an approved long-acting therapy (LAT) for treatment of schizophrenia. Available clinical information on therapeutic outcomes associated with switching from oral APs/LAT to PP is limited. This analysis evaluates the data from a clinical trial (posthoc analysis) and postmarketing database, to compare relapse rates when switching from risperidone LAT (RC) with relapses following switches from other APs (oral and LATs) to PP.
METHODS
Data from a prospective trial (phase-3b/4) were analyzed to assess the symptom worsening or relapse in 260 patients switching from RC (n=56) or oral risperidone (n=204) to PP. These data were compared with switches from oral AP/other LATs to PP. Data were also retrieved from 2 separate, but similar, searches of the postmarketing database (Company's Worldwide Safety Database [SCEPTRE]) for a cumulative period, up to 16 April 2013, and included cases of lack of efficacy (LOE) or symptom relapse as proxies of insufficient response when switched from LAT (RC/other) to PP. Time to first relapse event after switching from RC to PP was compared.
RESULTS
In the clinical trial, the incidence of reports of symptom worsening or relapse when switched from RC to PP (17.9%) was similar to switches from oral APs to PP (risperidone [12.3%]; others [16.9%]) as well as switches from other LATs to PP (range: 11.4% to 16.7%). The 2 SCEPTRE searches identified a total of 100 cases of LOE or relapse after switching from RC to PP. There were insufficient data from the 100 cases to indicate a specific period of vulnerability to relapse after switching from RC to PP.
CONCLUSIONS
The incidences of symptom worsening or relapse were similar when patients switched from RC to PP versus from oral AP or other LATs to PP. No specific period of vulnerability for LOE or relapse was identified in the postmarketing review. Clinicians should monitor patients closely for symptoms of relapse at the time of switching to a new AP regimen and for several weeks thereafter. When switching between LAT, if symptoms emerge, physicians may consider temporarily adding an oral AP during the transition.

**NR3-105**

**TECHNOLOGY TRANSFER FOR THE IMPLEMENTATION OF A CLINICAL TRIALS NETWORK ON DRUG ABUSE AND MENTAL HEALTH IN MEXICO**

*Lead Author: Viviana E. Horigian, M.D.*
*Co-Author(s): Elizabeth Alonso, Ph.D., Carlos Berlanga M.D., Rodrigo A. Marín-Navarrete, Ph.D., María Elena Medina- Mora, Ph.D., María A. Perez, B.A.,José Szapocznik, Ph.D, Rosa E. Verdeja, M.Ed.*

**SUMMARY:**
Background: A partnership between the Florida Node Alliance of the U.S. National Drug Abuse Treatment Clinical Trials Network and Mexico's National Institute of Psychiatry was established to improve substance abuse practice in Mexico. The purpose of this partnership was to develop a Mexican national clinical trials network of substance abuse researchers and providers capable of implementing effectiveness randomized clinical trials in community-based settings. Methods: The Florida Node Alliance shared the "know how" for the development of the research infrastructure to implement randomized clinical trials in community programs through core and specific training modules that encompassed coaching parings, modeling, monitoring and feedback. The National Institute of Psychiatry in turn led the Mexican national effort of creating the network of researchers and practitioners and the implementation of the trial. Results: A technology transfer model was developed. The Mexican national clinical trials network of substance abuse researchers and providers was created and the first randomized clinical trial was implemented with outstanding performance. Conclusions: A collaborative model of technology transfer was useful in creating a Mexican researcher-provider network that was successful in changing practice in substance abuse research and treatment in Mexico.

**NR3-106**
**PREDICTING RESPONSE IN PATIENTS WITH NEGATIVE SYMPTOMS OF SCHIZOPHRENIA: ANALYSES OF PHASE II DATA WITH BITOPERTIN ADJUNCTIVE TO ANTIPSYCHOTIC THERAPY**

*Lead Author: John M. Kane, M.D.*
*Co-Author(s): Cedric O'Gorman, M.D., Ellen Lentz, Ph.D., Shitij Kapur, Ph.D.*

**SUMMARY:**
Introduction: The timing of symptom improvement in patients with schizophrenia (SCZ) treated with antipsychotics (APs) is a significant consideration, as early improvement/non-improvement may predict response/non-response to APs in these patients and aid physicians in making clinically important decisions of when/whether to continue or change treatments. Methods: Patients with predominantly negative symptoms of SCZ were enrolled in an 8-week phase II proof-of-concept study of bitopertin as an adjunct to AP treatment. Treated patients who were assessed by qualified raters and had all assessments during treatment were included in this analysis (N=254). Response was defined as ≥20% improvement from baseline in PANSS Negative Symptom Factor Score. PANSS items were rescaled so that the score range was 0 to 6 for calculating percent change from baseline. Logistic regression was used to estimate the probability of response predicted by early improvement for a given time point. Receiver Operating Characteristic (ROC) curves were used to determine the optimal cut-off of improvement at early time points by maximizing the Youden index J. Area under the curve (AUC), sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and predictive power (PP) were used to determine the optimal time point and its optimal cut-off for defining early improvement. Time to response also was analyzed.
Results: The Week (Wk) 8 response rates for placebo, and 10 mg, 30 mg, and 60 mg bitopertin were 54.5%, 78.1%, 69.4%, and 58.1%, respectively. For responders, the mean reduction from baseline at Wk 8 was 44%. Of patients who ever responded, ~90% sustained response from their first response. The optimal time point for early improvement to predict endpoint response was Wk 2. The optimal cut-offs for early improvement to predict endpoint response were 6.3% for Wk 1 and 10.7% for Wk 2. Using a 10% cut-off for Wk 2, sensitivity was 69.7%; specificity, 83.1%; PPV, 88.5%; NPV, 59.7%; and PP, 74.4%. While predictive, the ability to differentiate a 10% improvement in negative symptoms using the PANSS may be challenging clinically. Nonetheless, approximately 9 of 10 improvers at Wk 2 went on to respond at Wk 8, stressing the importance of early assessment of negative symptom improvement.
Discussion: To our knowledge, these analyses are the first to look at the timing of response of negative symptoms to a potential adjunctive treatment in SCZ. Even in patients with stable and sustained negative symptoms, improvement began early and was predictive of response. Future studies will need to confirm this, evaluate whether differential predictors exist for placebo versus bitopertin responders, and assess applicability of findings to clinical practice. Longer-term data from the ongoing phase III bitopertin development program in SCZ can explore these questions further.

**NR3-107**
**CHARACTERISTICS OF PATIENTS WITH BED COMPARED TO PATIENTS WITH EDNOS AND PATIENTS WITHOUT AN EATING DISORDER**

*Lead Author: Brandon K. Bellows, Pharm.D.*
*Co-Author(s): Manjiri Pawaskar, Ph.D., Joanne LaFleur, Pharm.D., M.S.P.H., Aaron W.C. Kamauu, M.D., M.S., M.P.H., Dylan Supina, Ph.D., Thomas Babcock, D.O., Scott L. Duvall, Ph.D.*

**SUMMARY:**
Introduction
While binge eating disorder (BED) is the most common eating disorder, there is no ICD-9 code for BED and patients may be included under the non-specific code eating disorder not otherwise specified (EDNOS). The objective of this study was to compare the characteristics of patients with BED identified using natural language processing (NLP) to patients with EDNOS and to matched-patients without an eating disorder.
Methods
Adult patients were identified from the Veterans Health Administration electronic health records between 2000 and 2011. Those with BED were identified using NLP and those with EDNOS were identified by ICD-9 code (307.50) and further narrowed to those without BED (EDNOS-only). The index date was defined as the date of diagnosis. Patients with no eating disorder (No ED) were randomly matched up to 4:1 as available to patients with BED on the basis of age, sex, BMI, and index month. A final No ED group was also matched up to 4:1 to BED patients on the above characteristics as well as a diagnosis of depression (depression-matched No ED). Patients were required to have ≥1 year of pre- and post-index date activity.

Patients with BED and EDNOS were excluded if they had a diagnosis for another eating disorder. The demographic (age, sex, race, BMI) and clinical characteristics (comorbidities, medication use) of patients with BED were then compared to patients with EDNOS, No ED, and depression-matched No ED.
Results
A total of 593 BED, 1354 EDNOS-only, 2332 No ED, and 1895 depression-matched No ED patients were identified. Only 68 BED patients (11.5%) had an EDNOS ICD-9 code. Patients with BED were younger (48.7 vs. 49.8 years, p=0.04), more likely to be male (72.2% vs. 62.8%, p<0.001), and obese (BMI 40.2 vs. 37.0, p<0.001) than EDNOS-only patients. Fewer BED patients had depression than EDNOS-only (20.7% vs. 32.2%, p<0.001), but more had hypertension (60.2% vs. 52.4%, p=0.001), heart disease (30.0% vs. 14.5%, p<0.001), and sleep apnea (29.0% vs. 23.3%, p=0.008). The BED group had significantly more patients with comorbidities and medication use than both the No ED and depression-matched No ED. The two most common comorbidities among these groups were hypertension (BED 60.2% vs. No ED 43.4%, p<0.001, and depression-matched No ED 47.4%, p<0.001) and hyperlipidemia (BED 50.8% vs. No ED 36.6%, p<0.001, and depression-matched No ED 39.9%, p<0.001).
Conclusion
Patients with BED are not commonly coded as having a diagnosis of EDNOS in the VA population. Furthermore, there were significant differences in the clinical characteristics between patients with BED and EDNOS-only. This highlights the need for an identifier of BED in structured data, such as an ICD-9 or ICD-10 code. More patients with BED had comorbidities and medication use than matched-patient cohorts without an eating disorder. This may indicate higher clinical burden in BED patients.

**NR3-108**

**THE CORRELATION OF THE KOREAN VERSION OF THE WHO FIVE WELL-BEING INDEX WITH DEPRESSIVE SYMPTOMS AND QUALITY OF LIFE IN THE COMMUNITY-DWELLING ELDERLY**

*Lead Author: Do Hoon Kim, M.D.*
*Co-Author(s): Yoo Sun Moon, M.D. Ph.D., Hyun Ji Kim, M.D.*

**SUMMARY:**
Background: Depression in the geriatric population is becoming markedly more prevalent. Quality of life has been linked with the development of depression. A screening tool for assessing both geriatric depression and quality of life is needed.
Objective: The purpose of this study was to assess the utility of the Korean version of the World Health Organization Five Well-Being Index (WHO-5) in evaluating geriatric depression and quality of life as compared to the widely-used Short Geriatric Depression Scale of Korean version (SGDS-K).
Methods: Two hundred fourth four elderly people(>60-years-of-age) living in the Yanggu and Inje areas of Gangwon Province, Korea, were interviewed and responded to scales including WHO-5, SGDS-K, Mini Mental Status Examination in the Korean version of the CERAD assessment packet (MMSE-KC), and Geriatric Quality of Life-Dementia (GQOL-D). A total WHO-5 score <13 indicated low well-being.
Results: The SGDS-K score showed a reverse correlation with the WHO-5, MMSE-KC, and GQOL-D scores. The WHO-5 score reversely correlated with the SGDS-K score and positively correlated with GQOL-D, but showed no significant correlation with MMSE-KC score. Subjects ranked as having poor well-being (WHO-5 score < 13) had a significantly lower GQOL-D score and a significantly higher SGDS-K score. In multiple regression analysis, WHO-5 was significantly associated with GQOL-D and SGDS-K.
Conclusion: The Korean version of WHO-5 is useful in evaluating both depressive symptoms and quality of life of community-dwelling elderly.

**NR3-109**

**BRAIN ACTIVATION ASSOCIATED WITH THE EFFECTS OF SYMPTOM PROVOCATION DURING MEMORY RETRIEVAL IN PATIENTS WITH OBSESSIVE-COMPULSIVE DISORDER**

*Lead Author: Jong Chul Yang, M.D.*
*Co-Author(s): Byoungjo Kim, MD, Psychiatry of Presbyterian Medical Center, Gwang-Won Kim, PhD, Radiology of Chonnam National University Hospital*

SUMMARY:
Objective: Patients with obsessive-compulsive disorder (OCD) sometimes have cognitive dysfunctions that are related to the aggravation of OCD symptoms. But there are few studies about its neural mechanism. The purpose of this study is to assess the influence of symptom provocation on memory retrieval in OCD patients and to demonstrate the associated brain area. We evaluated the cerebral activation associated with the memory retrieval of unpleasant and neutral words in OCD patients and healthy controls using fMRI during word recall task.
Methods: 14 OCD patients (mean age = 29.0±12.3 years) and 14 healthy controls (mean age = 32.9±6.2 years) were participated. All OCD patients were diagnosed on the basis of DSM-IV-TR and had no other psychiatric disorders. They underwent 3.0 Tesla fMRI during word recall task. The stimulation paradigm consisted of rest condition, encoding of two-syllable words and memory retrieval of previously learned words, each lasted for 14, 18, and 18 seconds, respectively. All subjects were performed twice stimulation paradigm with unpleasant and neutral words. Six different words were presented for 3 seconds each. In the retrieval task, different and same words used in the encoding task were presented. The brain activation maps were analyzed by SPM8 program.
Results: OCD patients showed higher activities compared with healthy controls in the memory retrieval with unpleasant words over neutral (p<0.005). In the task with unpleasant words, the OCD patients showed significantly increased activities in the regions of superior, middle and inferior frontal gyri, superior and inferior temporal gyri, fusiform gyrus, superior parietal gyri, calcarine gyrus, superior and middle occipital gyri (p<0.005) compared with healthy controls.
Conclusion: There are different cerebral activations between OCD patients and healthy controls in memory retrieval, especially with unpleasant words. These findings suggest that cognitive function of OCD patients may be significantly impaired by symptom provocation.

**NR3-110**

**PHARMACOLOGICAL TREATMENT RATE OF ADHD; USING NATIONAL INSURANCE DATA FROM 2007 TO 2011 IN KOREA**

*Lead Author: Chanmin Park, M.D.*
*Co-Author(s): Minha Hong1, Bongseog Kim2, Duk-Soo Moon3, Soo-Young Bhang4, Seok Han Sohn5, In-Hwan Oh6, Soyoung*

*Irene Lee7, Yeon Jung Lee1, Un-Sun Chung8, Yoo-Sook Joung9, Hyung-yun Choi10, Jun-Won Hwang11, Young Sook Kwack12, Geon Ho Bahn1.*

**SUMMARY:**
Introduction
ADHD is one of the most frequently diagnosed psychiatric disorders with an average worldwide prevalence of 5.3% in children, recognized as a life-long condition with a substantial effect on the quality of life. Although some Taiwanese data has been reported, there are few studies on the incidence and treatment rate of ADHD in Korea. We intend to investigate the current status of ADHD diagnosis and treatment rate and related factors in Korea, based on the National Health Insurance date from 2007 to 2011.
Method
Based on the insurance claim data from the National Health Insurance from January 1st, 2007 to December 31st, 2011, the inclusion criteria were as follows: (1) Age ranging from 6-18, (2) those with 1 or more claims by the code F90.0 from the ICD-10 (international classification of disease, 10th revision), (3) those who had no claims for the past 1 year. Subjects who met all three of the criteria were included.
Results
The number of subjects diagnosed as ADHD from 2008 to 2011, age ranging from 6 to 18 years old, was 29,687, 30,043, 28,436, 29,076 each year, with the total number of 117,242. Except for the 7-9 years old group with a significant decrease from 2008 to 2011, there was no significant difference in all age and gender groups.
The number of patients who were diagnosed as ADHD and treated with medication, from 2008 to 2011, was 17,472, 22,213, 20,325, 21,351 each year, with the total number of 81,361. There was a significant increase in the 6 year old group. Among the first prescribed medication, atomoxetine significantly increased.
From 2008 to 2011, the average diagnostic incidence rate was 0.357% and the average treatment incidence rate was 0.248%.
Discussion
By analyzing the National Health Insurance data in Korea, we could verify that ADHD diagnosis and treatment incidence is still low. In order to increase adherence rates and treatment compliance, future studies investigating related factors is necessary.
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**NR3-111**
**PIERRE RIVIÈRE VS. ANDERS BREIVIK: IS HISTORY REPEATING ITSELF?**
**RATIONALITY, MADNESS, AND PSYCHOPATHOLOGY IN THE 19TH AND 21ST CENTURY**

*Lead Author: Lars S. Nilsson, M.D.*
*Co-Author(s): Milting, Kristina, M.D., Parnas, Annick Urfer, M.D, Ph.D., Petrov, Igor, M.D., Sjaelland, René, M.D.*

**SUMMARY:**
Introduction:
In 2011 Anders Breivik, AB, slaughtered 77 civilians in a twofold attack on downtown Oslo and the island of Utøya. In the ensuing trial AB's sanity or lack thereof was fiercely contested as two psychiatric evaluations arriving at radically different conclusions were drawn up. One found AB to be suffering from paranoid schizophrenia whereas the other discovered no psychotic manifestations and instead diagnosed him with a narcissistic personality disorder with antisocial traits.
Though unrivalled in the scope of its bestiality the case of AB is not unique. In 1835 French peasant Pierre Rivière, PR, in a seemingly incomprehensible act of cruelty killed his immediate family. Some contemporaries including Esquirol saw in PR the traces of radical irrationality while others ascribed the deeds to an evil constitution. Thus a basic disagreement on the make-up of rationality and madness is seen to persist across the centuries and the advances made in all fields of psychiatry. It is the goal of this poster to clarify the nature of this divergence of opinions and to point a way forward.
Methods:
A 1975 book by Foucault et al. contains a manuscript by PR detailing the background for his actions, exempts from contemporary sources, and a number of analyses of the psychiatric evaluations that followed. During the trial of AB the two psychiatric evaluations were leaked to the press, thus making it possible to carry out a phenomenologically informed, comparative psychopathological reading of the documents using the case of PR as a perspectival backdrop for understanding the disagreement at play.
Results:
As were the case in 19th century France a certain grille de lecture influences the evaluations of AB. Rather than being neutral case reports the evaluations paint different portraits as pertinent omissions of certain facts are made. Thus the second evaluation manages to invoke an aura of rationality around AB that allows for radically different interpretations of behavior and statements that were initially considered indicative of psychosis.
Discussion and conclusion:
As the recent debate over the revision of the DSM clearly demonstrated current diagnostic praxis faces gross challenges. It appears to be this fundamental crisis of both academic and clinical psychiatry that is encapsulated in the disagreement on the constitution of PR and AB. Across almost two centuries and the huge strides made by neurobiology and the cognitive sciences these two cases seem to have run a parallel yet somewhat misleading course. Prominent psychiatrists have called attention to the unintended consequences of adopting the diagnostic manuals as the ultimate authority on psychopathology. We suggest that a renewed interest in the continuation of a phenomenological psychopathology with a strong eye for context and Gestalt as opposed to mere "symptom-counting" is indeed called for as a sine qua non for a psychiatry that strives for both reliability and validity

**NR3-112**

**FREQUENCY OF DEPRESSION IN PATIENTS WITH DIABETES MELLITUS IN PAKISTAN**

*Lead Author: Muhammad W. Azeem, M.D.*
*Co-Author(s): Irum Saddique, MBBS, Imtiaz A. Dogar, MBBS, FCPS , Nighet Haider, MPhil, Samreen Afzal, MSc*

**SUMMARY:**
Background:
Studies have shown an association between depression and diabetes mellitus. There is little data in developing countries, such as Pakistan, regarding frequency of depression in patients with diabetes mellitus.
Objective:
The objectives of the study were: 1. To assess the frequency of depression in patients with diabetes mellitus. 2. To compare the severity of depression among patients taking insulin versus oral hypoglycemic medications.
Methods:
This was a prospective study conducted between January 2012 and June 2012 at an outpatient department of a tertiary care hospital in Pakistan. Participants were 70 patients (Males: 57% and Females: 43%) with diagnosis of diabetes mellitus. 50% were taking insulin and the other 50% oral hypoglycemic agents. Patients were interviewed according to ICD-10 criteria for depression. Informed consent was obtained. The study was approved by the Hospital Ethics Committee.
Results:
The age range of patients was between 30 and 55 years with 81% being married. 71% were from lower socioeconomic status and 29% from middle socioeconomic status. According to ICD-10 criteria, depression was present among 53% of the patients. The severity of depression was: Mild 20%, Moderate 23% and Severe 10%. Among 35 patients on insulin, 31% had depression with following severity: Mild 9%, Moderate 11% and Severe 11%. Among 35 patients on oral hypoglycemic medications, 74% were depressed with following severity: Mild 31%, Moderate 34% and Severe 9%.
Conclusions:
1.The frequency of depression is higher in patients with diabetes mellitus.
2.Diabetic patients on oral hypoglycemic medications are at higher risk of developing depression as compared to patients on insulin (P value <.001).
3.Limitations of this study include small sample size and study being conducted at only one site.
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Key Words:
Diabetes Mellitus, Depression, Insulin, Oral Hypoglycemic Medications

**INTERNATIONAL POSTER SESSION 02**
**INTERNATIONAL POSTER SESSION 2**

**NR4-001**

**INTERNATIONAL, MULTICENTER, OPEN STUDY OF EFFICACY AND SAFETY OF DESVENLAFAXINE IN A NATURALISTIC SETTING IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER**

*Lead Author: Daniel L. Mosca, M.D.*
*Co-Author(s): Mariana Fontao M.D., Guillermo Maligne M.D., Miguel Marquez M.D.*

**SUMMARY:**
Primary Objective
We assessed the efficacy of Desvenlafaxine 50 and 100 mg in a naturalistic setting by the change from baseline to end of week 26 in the Montgomery-Asberg Depression Rating Scale (MADRS) total score and Hamilton Depression Rating Scale (HAM-D 17) total score in male and female patients who are 18 years of age or older with a Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) diagnosis of Major Depressive Disorder (MDD) confirmed by MINI at the inclusion. Safety Measures assessed were: Adverse event recording (over all and sexual related specifically with ASEX), clinical laboratory parameters (hematology, chemistry, urinalysis), vital sign parameters (including orthostatic blood pressure), Young Mania Rating Scale (combined with the BSDS at the inclusion), and DDI assessment.
Secondary Objective
We evaluated the efficacy of treatment thru CGI-S and I, HAM-A and the outcome of symptoms thru SDS, Q-LES-Q.
Treatment
Eligible patients were included in a 50 mg daily doses of Desvenlafaxine, treatment which lasted up to 6 months followed by a relapse assessment in months 12 and 18 in the patients who had reached and maintain remission at month 6. Desvelafaxine dose was increased to 100 mg daily in patients who didn't show any response at month 2 or didn't reach remission at month 3. Patients completing Visits 1 through Month 6 will were considered treatment completion. All included patients who prematurely discontinued from the study, regardless of cause, were seen for a final assessment at early termination (ET). A final assessment were defined as completion of the evaluations scheduled for Month 6 and the cause of discontinuation were registered.
Endpoints
MADRS and HAM-D total score, MADRS and HAM-D response (≥30% reduction from baseline), MADRS remission (≤11 total score) and HAM-D remission (≤7 total score)
Prior and Concomitant Therapy
A complete list of medications for either episodic or chronic use were recorded in every visit throughout the duration of the study. All concomitant medications were allowed under real-world naturalistic conditions with the exception of the drugs included in the exclusion criteria.
Specific Measures for publication
Antidepressant efficacy by itself, in concomitant therapy and with or without medical and psychiatry co morbidities
BP and HR variations in a naturalistic setting
Adverse events
Significant changes in laboratory assessments
Sexual Adverse Events (ASEX)
Changes in disability and quality of life
Manic Switch induction risk (YMRS and BSDS)
Relapse prevention follow-up

Results
90 patients were included in the study showing a good profile of efficacy (68% Improvement, 48% remission)with a low percentage of Adverse event (21% of patients). Some of the patients who improved received a second medication as adjunct therapy (6% bupropion, 5% mirtazapine, 5% lamotrigine, 3% aripiprazole)

**NR4-002**
**PSYCHOPHARMACOLOGICAL TREATMENT IN PREGNANCY AND ITS CONSEQUENCES**
*Lead Author: Mirta Romalde*
*Co-Author(s): Analia Espiño, M.D*

**SUMMARY:**
Advising a pregnant or breastfeeding woman to discontinue medication exchanges the fetal or neonatal risks of medication exposure for the risks of untreated maternal illness. It is impossible not to associate this dilemma with the high probability that a woman has to receive a psychotropic during her growing age. There are no national publishments which evaluate the risks of such exposure and establish clear steps to follow. Taking all these aspects into consideration, we will show all the results of medical story of pregnant women who received psychotropics and their newlyborn children who were assisted at Piñero Hospital during the last seven years. Needless to say, we consider absolutely essential all this knowledge when it comes to a doctor development, with the aim of offering women who suffer from mental disorders, all kind of responsible and safe treatments which tend to improve their life quality.

**NR4-003**
**TREATMENT OF ADDITIOTREATMENT OF ADDITION IN ALZHEIMER'S DISEASE: THE EFFICACY OF RATIONALE FOR COMBINATION THERAPY WITH GALANTAMINE AND MEMANTINE**
*Lead Author: Luisa Schmidt, M.D.*
*Co-Author(s): Julio C. Zarra, M.D.*

**SUMMARY:**
Introduction: Considering the moderate clinical state the Alzheimer´s Disease, without therapeutic response or poor therapeutic response with an anti dementia agent, we try improvement the therapeutic response with 2 drugs association.
Methods: The experience included 758 patients who were enrolled in a prospective, observational, multicenter, and open-label study to receive 16 mg/day of galantamine and 30 mg/day of memantine for 18 months of treatment of addition.
Results: The therapeutic response was measured using the Mini Mental State Examination (MMSE), Clinical Dementia Rating (CDR), Alzheimer's Disease Assessment Scale (ADAS-GOG), Functional Activities Questionnaire (FAQ) the Clinical Global Impression Scale (CGI) and the UKU scale of adverse effects. Taking into account the efficacy, safety and adverse events of the treatment during 18 months, the final results of the study showed that galantamine with addition memantine improve cognition, behavioural symptoms, and the general well-being of patients with cognitive impairment: Alzheimer's disease. The incidence of adverse events was not significant and a very good profile of tolerability and safety was observed.
Conclusion: At the conclusion of this session, we should be able to demonstrate with use the association memantine - galantamine in neurocognitive disorder: Alzheimer's disease, improve cognition, behavioural symptoms, and the general state recognized as neurocognitive disorder.
Hypothesis: The efficacy, safety, and tolerability of cholinergic agent: GALANTAMINE (with a dual mechanism of action on the cholinergic a system) and moderate affinity NMDA- receptor antagonist: MEMANTINE, were assessed taking into account the profile of patients with neurocognitive disorder: Alzheimer's disease, from the clinical aspects and the different classifications.
Discussion: Suggest that before Alzheimer´s Disease continues evolution to a severe state, the pharmacological use this association to slowing or stopping the dementia process.

**NR4-004**
**BELIEFS ABOUT THE CONCEPT OF SCHIZOPHRENIA IN THE ARGENTINIAN POPULATION**
*Lead Author: Noelia Benchart*
*Co-Author(s): Laura N. Vanadía Lic, Raimundo J. Muscellini Dr*

**SUMMARY:**
Objective: Schizophrenia is conceptualized as a neurodevelopmental disorder, characterized by a fundamental alteration of thought. Its etiology is multi-, with genetic and epigenetic factors intervening in its genesis and development. This syndromic diagnosis lacking dissociation has a number of positive, negative and disorganization symptoms, associated with a variable degree of personal functioning.
Cognitive, emotional and social alterations revealed by individuals with schizophrenia affect their family and community environments, determining interaction patterns. The information that these environments provide is central for the treatment of individuals, increasing or decreasing the chances of recovery. This demographic research examined the information that people have about schizophrenia.
Method: The sample consisted of 980 people average educational level, which was self-administered a closed questionnaire of 20 questions about: schizophrenia diagnosis, etiology and symptomatology; and treatment, social and cognitive functioning of individuals.
Results: The data obtained suggest relatives have more information about the following: individuals with schizophrenia can work and have children; the disorder is not contagious; family psychoeducation is a key therapeutic resource; and hospitalization is not the only possible treatment alternative.
Misinformation focused on the perception of individuals with schizophrenia as more violent than other people without the disorder.
The highest level of ignorance was evident in the contributions of pharmacology to treatment and etiology polygenetic factors.
Conclusions: The analyzed information highlights the importance of developing psychoeducational interventions on a social level to counteract the stigmatization produced by unknown by unknown or distorted information, as well as to strengthen the social reintegration of the individual and their adherence to treatment.

**NR4-005**
**EVOLUTION OF PATIENTS CONSULTING FOR MEMORY DISORDER: THOSE THAT IMPROVE, WHICH REMAIN STATIONARY AND ENDING IN DEMENTIA**

*Lead Author: Julio C. Zarra, M.D.*
*Co-Author(s): Luisa C. Schmidt, M.D.*

**SUMMARY:**
Introduction: Even though most than a hundred years have passed since we know Alzheimer's disease today it's considered as the human's frightful flagellum. While most of mental disease seem to be losing its evilness, the neurocognitives disorders caused by Alzheimer's disease, far from attenuating has duplicated it's appearance every each five years. And its symptoms are still being more depriving.
So, in opposition to the rest of the illness that affects the nervous system and the psychic apparatus, which due to the new treatments has been attenuated the clinical forms' Alzheimer. With its severe pronostic and the illness evolution, haven't been soften.
Methods: present our study group in the four institutional medical centers, with ambulatory patients, who consult about a cognitive disease. We describe the evolution trough time, taking into account the pharmacological treatments. We included 1150 patients with diagnosis the Mild Cognitive Disorder and 558 patients with diagnosis the Alzheimer`s Disease (DSM IV-TR criteria)
Results: the importance of the early detection of memory disorder, as one of the first signs of alarm which give us the opportunity to intervene therapeutically in on time.
Conclusions: We can recognize the Mild Cognitive Disorder as a clue which reveal a first therapeutic instance probably in efficacy in this cruel evolution towards dementia.
Hypothesis: Our intention is firstly, share some concepts to consider Alzheimer's disease as a cruel illness that can reach all the elderly people around the world.
Secondly, to analyze the different forms of presentation than can mask a clinical state. Which many times could end-up in dementia? And will soon destroy the whole psychic apparatus of a person.
Discussion: In the presence of a disorder of memory in the elderly people, with the possibility of evolving towards dementia, we prefer to begin drug therapy early, preventive character.

**NR4-006**
**EFFICACY AND SAFETY LONG-TERM TREATMENT WITH GALANTAMINE IN MILD COGNITIVE IMPAIRMENT**

*Lead Author: Julio C. Zarra, M.D.*
*Co-Author(s): Luisa C. Schmidt, M.D.*

**SUMMARY:**
INTRODUCTION: To evaluate the efficacy, safety and tolerability of galantamine in long-term in Mild Cognitive Impairment. So there is a possible benefit in the deficit in executive and cognitive cerebral function (cholinergic system) with treatment with Galantamine.
METHODS: a multicenter, open label , prospective, observational study enrolled 1128 patients, more 55 years old with Mild Neurocognitive Disorder (DSM IV criteria), during 36 months of treatment with galantamine 16 mg./day. (Extended release capsules: 16 mg.)
Assessments included the MMSE, CDR, ADAS-GOG, Trail making test, Raven Test, GO-NO-GO test, FAQ, Global Deterioration Scale, GCI and UKU scale of adverse effects.
RESULTS: a total 1128 outpatients were treated with 16 mg. / day galantamine during 36 months, the therapeutic response evaluated with CDR, MMSE and the tests and scales of function cognitive measuring, GCI and UKU scale of adverse effects, comparing the baseline to final scores.
CONCLUSIÓN: Mild Cognitive Disorder is being examined, so there isn't enought treatment for this. A long-term treatment (36 months) galantamine improves cognition and global function, behavioural symptoms and the general state well being of patients with Mild Cognitive Disorder. With incidence of adverse effects not significant and a very good profile of safety, the final results of the study suggest that galantamine may be particularly appropiate in the Mild Cognitive Disorder.
HYPOTHESIS: galantamine is a reversible, competitive cholinesterase inhibitor that also allosterically modulates nicotine acetylcholine receptors. Cholinesterase inhibitors inhibit (block) the action of acetylcholinesterase, the enzyme responsible for the destruction of acetylcholine. Acetylcholine is one of several neurotransmitters in the brain, chemicals that nerve cells use to communicate with one another. Reduced levels of acetylcholine in the brain are believed to be responsible for some of the symptoms of Alzheimer's disease. By blocking the enzyme that destroys acetylcholine, galantamine increases the concentration of acetylcholine in the brain, and this increase is believed to be responsible for the improvement in thinking seen with galantamine.
DISCUSSION: We can recognize the Mild Cognitive Disorder as a clue which reveal a first therapeutic instance probably in efficacy in this cruel evolution towards dementia.

**NR4-007**
**MODERN STATE OF THE ISSUE OF LONELINESS AMONG ELDERLY PEOPLE IN ARMENIA**

*Lead Author: Karine Tataryan, Ph.D.*

**SUMMARY:**
The process of adapting to loneliness has great significance for people of all ages and is dealt with differently by different people. The acceptance or non-acceptance of loneliness has its roots in earlier periods of life, in old age its negative aspects simply feature more sharply.
In modern society, loneliness is a universal phenomenon, which does not recognize class, race or age barriers. Often, people do not even realize that it has become a regular part of their lives. The manifestation of the range and complexity of feelings of loneliness in elderly people is of a dual nature. On one hand, there is a heavy feeling of growing isolation from others and a fear of the consequences of living in loneliness; on the other hand, there is a desire to isolate oneself from others and protect one's world and its stability from potential invasion by others.
At a home for the elderly we interviewed 45 people, of whom 16 were male (35.6%) and 29 (64.4%) were female. The largest number of people were in the oldest group - 81 and older (31.1%), followed by those who were 76-80 years old (28.9%), then 71-75 years (22.2%), 66-70 years – 15.6% and 60-65 years – 2.2%.
Among the resident of the elderly home which we studied, 20 (44.5%) people were never married, 18 (40%) were widowed and had absolutely no contact with members of their family and other relatives. Only 7 (15.5%) residents were visited by their children from time to time.

During the study, it was noted that widowed men felt lonelier than widowed women, and among the single residents, men once again suffered more from loneliness than women. These data are partially explained by the specific features of how men and women tend to spend their free time in old age. The results of our study suggest that two-thirds of single men engage in activities that are characterized by being on one's own (watching television, reading the newspaper and so on) while the majority of single women dedicate their free time to all kinds of social activities. Elderly women, as a rule, have an easier time doing housework than men. A majority of elderly women is capable of tackling the nuances of housework more frequently than men.
In this way, understanding elderly people, respecting them as full members of society and comprehending the specifics of the process of aging one can provide comprehensive support for the elderly and prepare for one's own aging. In our opinion, this has to be taught to young people from an early age.

**NR4-008**

**ENHANCING PSYCHIATRIC KNOWLEDGE AND SKILLS IN PHYSICIAN TRAINEES**

*Lead Author: Carol Silberberg, M.B.B.S., M.Med.*
*Co-Author(s): Dr Jennifer J Conn MBBS FRACP MClinEd BSc(Hons) DipEd*

**SUMMARY:**
Introduction
Type 1 diabetes is arguably one of the most challenging chronic medical conditions for an individual to self-manage. Recognition is growing that health practitioner skill sets need to be extended to more effectively meet the needs of people with chronic conditions such as type 1 diabetes, especially in the behavioural and psychological domains. These skills, however, are often not formally addressed in training programs, and endocrinology trainees identified a number of gaps in their knowledge and skills. The Type 1 Diabetes Consulting Skills project is an initiative that aims to address this gap.
Methods
An extensive literature search was conducted, followed by a trainee learning needs analysis and focus groups. The development of the resource has also been informed by the clinical expertise of key diabetes practitioners, including endocrinologists and mental health practitioners, and contributions from consumer groups.
Results
47 participants (33 women, 14 men) completed the questionnaire. Almost half of the sample (47%) were in their first year of advanced training, 19% were in the second year and 32% in the third year. Trainees rated their confidence in a range of consulting skills using a Likert scale (range: 1-5). Areas where trainees lacked confidence included interviewing patients with psychiatric or psychological issues (mean 3.07, SD .74) and identifying and responding to psychiatric presentations such as depression (mean 3.15, SD .76) and eating disorders (mean 2.65, SD .74). They confirm the need for improving trainee confidence, especially in challenging areas such as promoting behaviour change and positive coping strategies, dealing with diabetes burnout, and identifying and responding to psychiatric presentations such as depression and eating disorders.
The resource that was developed covers two key areas:
(i) Supporting self-management, including information giving, enhancing health literacy, facilitating practical skills acquisition, problem solving, supporting behaviour change and promoting access to peer support
(ii) Addressing emotional, psychological and psychiatric issues which can impact on quality of life and the ability of people with type 1 diabetes to optimally self-manage their condition.
Discussion
Sessions on behaviour change, identifying psychological issues, conducting challenging consultations, and eating disorders have been piloted in various forums such as conferences and workshops over the development period. These education activities were highly rated by trainees, and feedback was incorporated to refine the resource. As many of this group will progress to leadership roles in diabetes care, the resource has the potential to have a high impact on the quality of care for people with type 1 diabetes in Australia. The resource also has potential applications with a wider target audience, with expressions of interest from other physician groups, GPs, and diabetes educators.

**NR4-009**

**DOES CBD AMELIORATE OR POTENTIATE THE PSYCHOTOMIMETIC EFFECTS OF THC? A RANDOMISED CONTROLLED TRIAL IN HUMANS**

*Lead Author: Nadia Solowij, Ph.D.*
*Co-Author(s): Samantha Broyd, Ph.D., Erika van Hell, Ph.D., Lisa-marie Greenwood, BPsych (Hons), Kuna Rueb, M.D., David Martelozzo, BPsych (Hons), Arno Hazekamp, Ph.D., Jessica Booth, Ph.D., Iain McGregor, Ph.D., Antonio Zuardi, Ph.D., Alison Jones, M.D., Ph.D., Rodney Croft, Ph.D., Robin Murray, M.D., Ph.D.*

**SUMMARY:**
Introduction: Cannabidiol (CBD) has been reported to possess antipsychotic properties and to ameliorate adverse effects of Δ9-tetrahydrocannabinol (THC). There is growing concern about the absence of CBD in high potency strains of cannabis, with purported increased incidence of psychosis. We conducted a double blind crossover, placebo-controlled randomised controlled trial in healthy volunteers of THC and CBD administration, each alone and in combination, to examine psychotomimetic effects.
Method: Twenty healthy volunteers (15 male, mean age 25) comprised 10 regular cannabis users (median 23 joints/mnth) and 10 irregular (n=6; median 3 joints/mnth) or non-naïve non-users of cannabis (n=4). Participants completed 5 randomised sessions: 1.Placebo (ethanol vapour); 2.THC 8 mg; 3.High CBD 400 mg; 4.THC 8 mg + Low CBD 4 mg; and 5.THC 8 mg + High CBD 400 mg. Two smaller top up doses were administered 1 and 2 hours after the main dose. Pure compounds dissolved in ethanol solution were administered via Volcano® Vaporiser. Effects were measured using a Visual Analogue Scale (VAS; Bowdle et al. 1998; with a 1-10 scale of intoxication), the Clinician Administered Dissociative States Scale (CADSS), and the Psychotomimetic States Inventory (PSI).
Results: In the entire sample, THC induced significant intoxication (VAS mean 6.4 (SD 2.5)), depersonalisation and derealisation (CADSS subscales), and cognitive disorganisation and perceptual distortion (PSI subscales), and THC conditions with or without CBD did not differ. However, outcome measures

correlated with monthly cannabis use, and condition by group interactions revealed differential effects between regular and irregular/non-users. High dose CBD potentiated the intoxicating effects of THC in regular users (p<.001). In contrast, high dose CBD tended to ameliorate, but low dose CBD potentiated THC effects in irregular/non-users. Differential psychoactivity of CBD was evident between groups, but there were no significant effects on psychotic-like symptoms such as paranoia, mania, delusional thinking or anhedonia. Plasma levels of each compound support differential potentiation and amelioration effects between groups.
Discussion: When coadministered with THC, CBD showed dose-dependent psychoactive effects that differed between regular cannabis users and irregular/non-users. Potentiating effects of low dose CBD in irregular users are consistent with preclinical studies and dictate caution in public health campaigns that advocate for the reinstatement of CBD in cannabis as a possible protective agent. Altered mechanisms of interaction between THC and CBD between regular and irregular/non-users are likely due to tolerance, receptor downregulation, and downstream metabolic differences. These findings have implications for further consideration of the efficacy of CBD as an antipsychotic; the cannabis use status of patients would be important to determine.
Funding: NHMRC Project Grant 1007593

**NR4-010**
**CHILD AND ADOLESCENT PSYCHIATRIC DISORDER IN BANGLADESH: CULTURAL PERSPECTIVE**
*Lead Author: Mohammad S.I. Mullick, M.B.B.S., Ph.D.*

**SUMMARY:**
Prevalence of child and adolescent psychiatric disorders in Bangladesh is around 15% which is more or less similar with other countries. Rate of behavioral disorders are comparatively lower and emotional disorders are relatively high than that of developed countries. OCD is relatively high with preponderance of religious content. Tendency of more somatization exist that caused increased number of somatic symptoms disorders. Conversion disorder is relatively more prevalent including significant number of psychotic presentation commonly known as “psychotic hysteria “, and “Jinn possession’; a pattern of possession state. Further, somatic presentation of anxiety and depressive disorders are important issues in diagnostic and treatment purpose. There is low rate of autism though it is increasing. Poverty, stigma, unfavorable parental behaviors, effect of urbanization, culture specific stressors are the main risk factors. It is evident that supportive family environment, high social capital, religiosity are the notable protective factors. Vast gap exists between service need and provision. Resource-based alternative service model is required to combat the need.

**NR4-011**
**NON-REM SLEEP EEG POWER DISTRIBUTION IN FATIGUE AND SLEEPINESS**
*Lead Author: Daniel Neu, M.D.*
*Co-Author(s): Neu D, M.D., Mairesse O, Ph.D., Sentissi O, M.D., Ph.D, Verbanck P, M.D., Ph.D.*

**SUMMARY:**
Objectives: Contribute to the sleep-related differentiation between daytime fatigue and sleepiness associated conditions.
Methods: 135 subjects presenting with sleep apnea-hyponea syndrome (SAHS, n=58) or chronic fatigue syndrome (CFS, n=52) with respective sleepiness or fatigue complaints and a control group (n=25) underwent polysomnography and psychometric assessments for fatigue, sleepiness, affective symptoms and sleep quality perception. Sleep EEG spectral analysis for ultra-slow, delta, theta, alpha, sigma and beta power bands was performed on frontal, central and occipital derivations.
Results: Patient groups presented with impaired sleep quality perception and higher affective symptom intensity. CFS patients presented with highest fatigue and SAHS patients with highest sleepiness levels. All groups presented with similar total sleep time. Subject groups mainly differed in sleep efficiency, wake state after sleep onset, duration of light sleep (N1, N2) and slow wave sleep, as well as in sleep fragmentation and respiratory disturbance. Relative Non-REM sleep power spectra distributions suggest a pattern of power exchange in higher frequency bands at the expense of central ultra-slow power in CFS patients during all Non-REM stages. In SAHS patients however, we found an opposite pattern at occipital sites during N1 and N2.
Conclusions: Slow wave activity presents as a crossroad of fatigue and sleepiness related conditions with however quite different spectral power band distributions during NREMS. Sleep might present with impaired homeostatic function in CFS. In contrast to sleepiness, this might explain why fatigue does not resolve with sleep in these patients. The present findings thus contribute to the differentiation of both phenomena.

**NR4-012**
**JUVENILE OFFENDERS WITH SEVERE MENTAL DISORDERS: A CONTEXTUALIZED ANALYSIS OF AGGRESSIVE BEHAVIOR IN A SECURE FORENSIC UNIT**
*Lead Author: Nelson Provost, M.Psy.*
*Co-Author(s): Shérazade Agharbi, Raphaël Buisseret, Yann Colin-Chatelier, Giovanni Deidda, Stephan De Smet, M.D., Gaëlle Grajek, M.Psy., Elsa Hoffmann, M.Psy., Redouane Lakhdar, Dimitri Lannoye, Bruno Piccinin, M.D., Anu Raevuori, M.D. Ph.D., Laurent Servais, M.D.*

**SUMMARY:**
Background
Few studies have focused on aggressive behavior among adolescents hospitalized in secure forensic units. To our knowledge, there are no studies investigating aggression (types and severity), taken measures, and the distinction between peer-oriented (horizontal violence) and staff-oriented (vertical violence) aggressive behaviors, which seems crucial for a better understanding of adolescent interactions.
Method
This study was conducted in Brussels, Belgium in a forensic 14-bedded unit of the C.H.J. Titeca. The unit treats adolescents (aged 15 to 18) with early-onset schizophrenia and/or major affective disorders, who have been involved in severe delinquency. To assess aggressive behavior, we have developed Contextualized-Overt Aggression Scale (C-OAS), a modified version of the Overt Aggression Scale (Yudofsky et al. 1987). The staff completed C-OAS for incidents leading to seclusion with or without physical restraint. The data were collected during 13 month period, resulting in 299 completed C-OAS.

Results
In 65.6% of the incidents, horizontal relationships were associated with the emergence and/or amplification of aggressive behaviors. Interactions with staff were also identified in the similar manner (27.1%), but had a noteworthy soothing effect on patients as well (41.1%). When patients were secluded with restraint, they committed significantly more (75.8%) Physical Aggression against Others (PAO) than without (51.6%) restraint (p=.03). This difference was not significant for other types of aggression. Furthermore, when using restraint, average level of severity in PAO was significantly higher (p<.001). Again, this difference was not significant for other types of aggression. When distinguishing the victims of PAO, seclusion with restraint was used more when PAO was staff-oriented. In turn, seclusion without restraint was used more when PAO was peer-oriented (p<.001). Almost one quarter (22.0%) of the seclusions with restraint were asked by patients themselves.
Discussion
This study highlights the importance of interpersonal dynamics (peer-to-peer and peer-to-staff) related to aggressive incidents and their relationships with taken measures. Peer-to-peer relationships appear particularly important for emerging and/or amplifying aggressive behavior. In the unit, staff members have two roles: to ensure structure and consistencies in the environment, which may trigger aggressive behaviors, and to develop positive relationships with patients. Taken measures depend on the types and severity of aggressive behaviors, and are modulated by the victim characteristics. Psychotic patients' wishes to be secluded with restraint are not astonishing and may reflect the search for soothing. In future, new instruments assessing contextual elements should be developed.

**NR4-013**

**EFFECTS OF CHRONIC CHILDHOOD ADVERSITIES ONSET ON PSYCHOPATHOLOGY THROUGH LIFE IN A BRAZILIAN URBAN POPULATION: FINDS FROM SÃO PAULO MEGACITY SURVEY**

*Lead Author: Bruno M. Mendonça Coêlho, M.D.*
*Co-Author(s): Geilson Lima Santana, M.D., Maria Carmen Viana, M.D., Laura Helena Andrade, M.D., Ph.D., Wang Yuan-Pang, M.D., Ph.D.*

**SUMMARY:**

Background:
Psychiatric disorders have been associated with previous childhood adversities (CA). We analyze the effect of age onset of chronic CA through life on the risk DSM-IV/CIDI disorders.
Method:
The WHO World Mental Health Composite International Diagnostic Interview (WMH-CIDI) was used in a stratified, multistage area probability sample of 5,037 individuals aged 18 or more to assess the presence of 20 psychiatric disorders, childhood adversities and their ages of onset. Discrete-time survival models were performed to estimate the odds of disorder onset. Data are from the São Paulo Megacity Mental Health Survey, the Brazilian branch of World Mental Health Survey Initiative.
Results:
53.6% of the sample experienced at least one CA and Parental Death (16.1%) and Physical Abuse (16%) were the most reported CA. Parental Mental Illness (OR=1.99 to 2.27) and Family Violence (OR=1.55 to 1.99) were the most consistent adversities associated with psychopathology across all age groups while Economic Adversities (OR=2.71 to 3.30) and Parent Criminal (OR=1.72 to 1.77)) were associated with psychopathology in individuals whose onset of disorder occurred 13 years old or older. Parental Mental Disorders and Economic Adversities were the strongest and most consistent predictors of all four classes of psychopathologies examined in multivariate models corrected for the clustering of adversities.
Conclusions:
Childhood adversities were consistently associated with mental disorders. Parental mental disorder and Family violence are the strongest predictors of the onset of psychopathology across all age groups among the studied predictors.

**NR4-014**

**RELIGIOSITY, RESILIENCE AND CLINICAL OUTCOMES IN DEPRESSED INPATIENTS**

*Lead Author: Bruno P. Mosqueiro, M.D.*
*Co-Author(s): Fernanda Lucia Capitanio Baeza, M.D., Rafaela Wolf Baptista, M.S., Aline Boni, M.S., Felipe Bauer Pinto da Costa, M.D., Marcelo Pio de Almeida Fleck, M.D., Ph.D., Thiago Fernando Vasconcelos Freire, M.D., Gabriela Lotin Nuernberg, M.D., Jader Piccin, M.D., Neusa Sica da Rocha, M.D., Ph.D.*

**SUMMARY:**

Introduction:
The relationship between religiosity and depression is still a challenging question in psychiatry. Many studies show an inverse association between religiosity and depression. Religiosity is also associated with resilience and as a protective factor for suicide. Nevertheless, negative religious coping, limited data of religiosity in different cultures and contexts as severe mental illness patients, increases the relevance of research.
The aim of our study is to evaluate the associations of intrinsic religiosity, resilience (as a possible mediator of effects) and characteristics of depressed inpatients. Our hypothesis is that high scores in intrinsic religiosity measure may be associated with higher resilience, and better clinical outcomes.
Methods:
This is a prospective naturalistic cohort of 177 patients in a psychiatry unit in South Brazil. Diagnostic of depressive episode was performed by MINI. Patients were accessed in the first 72 h of admission and 24 h before discharge. Protocols include socio-demographic, clinical data, Duke University Religion Index (DUREL) and Resilience Scale (RS). Kolmogorov-Smirnov and Shapiro-Wilk tests, Student's T-test, Chi-Square and Mann-Whitney tests (MW) were performed with SPSS 20.0 in statistical analysis. High intrinsic religiosity (HIR) and low intrinsic religiosity (LIR) measures were defined according intrinsic religiosity in DUREL.
Results:
Patients with HIR compared to LIR present higher global scores in Resilience Scale (means of 139,1 and 116,5, M.W. test, p<0,01) and in most of the individual items (p<0,05, M.W test). Chi-square test shows no differences in groups in ethnicity, marital status, education level, occupation, ECT treatment, previous suicide attempt, use of substances and suicide risk categories by MINI. T-Test identifies a mean age of 45,3 in HIR and 39,2 in LIR (p 0,03). No differences were found in IQ levels between groups. M.W test identify a difference in the age of first psychiatric diagnosis (p=0,001), means 24,7 in HIR and 34,9

in LIR. No differences were found in years of study, number of previous psychiatric hospitalizations, number of suicide attempts, length of stay in psychiatric unit and overall suicide risk score in MINI. Clinically, patients show no differences in BPRS, CGI, GAF, HAM-D and CIRS, at arrive and discharge.
Conclusion:
Intrinsic religiosity was associated to higher scores on resilience scale showing mainly positive associations between religiosity and mental health even in a severe mental illness population.

**NR4-015**

**TREATMENT OF LUPUS PSYCHOSIS WITH ELECTROCONVULSIVE THERAPY: A CASE REPORT AND SYSTEMATIC REVIEW**

*Lead Author: Antonio L. Nascimento, M.D., M.Sc.*
*Co-Author(s): Flávio V. Alheira, M.D., M.Sc., Marco A. A. Brasil, M.D., M.Sc., Ph.D., Daniel Levin, M.D., Carolina P. T. T. Martins, M.D., Fernanda Ramallo, M.D., Luciana L. Rego, M.D., Haydee M. A. Silva, M.D.*

**SUMMARY:**
Introduction: Systemic Lupus Erithematosus (SLE) is an inflammatory autoimmune disease, which may affect multiple organs, including the central nervous system (CNS). The American College of Rheumatology described nineteen neuropsychiatric SLE syndromes, including five groups of mental disorders: acute confusional states, anxiety disorders, cognitive dysfunction, mood disorders and psychosis. Neuropsychiatric SLE occurs in 20 to 70% of SLE patients.
Case Report: We present the case of a 35-year-old woman, diagnosed with SLE at the age of 32. One month before admission, the patient became aggressive, agitated, presented insomnia and derailment of thought. She was taken to a psychiatric emergency where she was prescribed haloperidol 15mg/day during one month, without clinical response. She was then referred to Hospital Universitário Clementino Fraga Filho. On admission, she was taking hydroxychloroquine (400mg/day) and haloperidol (15mg/day, discontinued at admission) and presented disorientation, mussitation, dehydration, malar rash, cogwheel rigidity on both arms, hypokinesia and hypertonia. She was able to understand simple commands and perform simple tasks. Liquor exams, brain CT and MRI, HIV and HCV serology were normal.
During her hospitalization, the patient presented delusions of grandeur and persecution, agitation and insomnia. On the second day of hospitalization, methylprednisolone 500mg/day was started and 10 days later, cyclophosphamide 700mg/day was added. She was also treated with quetiapine (50mg/day), haloperidol (up to 15mg/day) and olanzapine (up to 10mg/day), without clinical response on the first 6 weeks of treatment. Considering the inadequate response to two different classes of antipsychotics, we decided to start ECT on the 45th day of hospitalization. The patient was treated with 5 sessions of ECT with a sinusoidal wave ECT device with a 130v stimulus during 8 seconds, under anesthesia. After the 5th session of ECT, the patient presented complete remission of her symptoms, allowing her discharge and referral for outpatient treatment.
Systematic Review: A systematic review of the Pubmed and ISI Web of Science databases shows that only 17 cases of patients with psychiatric manifestations of lupus treated with ECT have been published. All patients were women and their mean age was 31.47±9.96 years. They presented several psychiatric manifestations of SLE (psychosis, depression, catatonia, delirium and manic episodes) refractory to psychotropic treatment and immunomodulators, corticoids and/or immunosuppressants. All patients presented good response to ECT.
Discussion: We presented the case of a woman with lupus psychosis refractory to pharmacological treatment who presented a good response to ECT. The present literature on this subject indicates that ECT might be an effective treatment for psychiatric manifestations of SLE. Further studies are necessary to investigate the safety and tolerability of ECT for these patients.

**NR4-016**

**SEROTONIN TRANSPORTER GENE POLYMORPHISM FOR NICOTINE DEPENDENCE**

*Lead Author: Sandra Odebrecht Vargas Nunes SOV Nunes, M.D., Ph.D.*
*Co-Author(s): Márcia R. P. de Castro, BSN., M.S., Maria Angelica E. Watanabe, Ph.D., Roberta L. Guembarovski, Ph.D., Carolina B. Ariza, Ph.D., Edna M. V. Reiche, Ph.D., Heber O. Vargas, M.D., Ph.D.*
*Mateus M. Vargas, Medical student , Luiz G. P. de Melo, M.D., Seetal Dodd, Ph.D., Michael Berk, M.D., Ph.D.*

**SUMMARY:**
Background: The aim of this study was to determine if the serotonin transporter (SLC6A4) gene polymorphism was associated with smoking behavior. Method: In this case-control study, smokers (n=185) and never smokers (n=175) were evaluated using the Fagerström Test for Nicotine Dependence. Diagnoses of major depressive disorders and nicotine dependence were confirmed using the DSM-IV. Genotyping assessment included SLC6A4 gene STin2 VNTR polymorphism detected by a multiplex polymerase chain reaction. Results: The smokers were significantly associated with having less years of education, more obesity, unemployed, depressive disorders, and suicide attempts histories compared to never smokers. We found a significantly risk of smoking behavior reduced with the STin2.10/10 genotype [odds ratio (OR), 0.39, 95%, confidence interval (CI) 0.23-0.67, p=0.0005] and risk of smoking behavior increased with the STin2.12 allele (OR= 2.59, 95% CI= 1.53-4.39, p=0.0003). Smokers with more years of smoking and more pack-years were significantly associated with lower frequency of the STin2.10/10 genotype and higher risk of the STin2.12 allele. Conclusions: Our results suggest that the absence STin2.10/10 genotype was a protective factor for smoking and the presence of the STin2.12 allele was associated with in the susceptibility to smoking behavior.

**NR4-017**

**EPIDEMIOLOGICAL AND SOCIAL DEMOGRAPHIC CHARACTERISTICS OF GENDER DYSPHORIA IN AN AMBULATORY POPULATION IN SÃO PAULO, BRAZIL**

*Lead Author: Alexandre Saadeh, Ph.D.*
*Co-Author(s): Daniel Augusto Mori Gagliotti, MD*

**SUMMARY:**
In Brazil, it was after 1997, with the Resolution of the Federal Council of Medicine, that care and treatment including surgical procedures of the transsexual population became intensive. The Sexual Orientation and Gender Identity Disorder Outpatient Unit (AMTIGOS) was established in 2010, where patients

with gender dysphoria are treated following the most WPATH orientations adapted through Brazilian social and cultural reality. Dispite the size of the country, there are only four authorized major centers of the brazilian public health system (SUS-Sistema Único de Saúde) that provide full health care for patients searching for sex reassignment surgery. According to the brazilian law, patients go through a minimum of two years interdisciplinary follow-up. There have been poor published reports regarding epidemiological and social demographic characteristics of gender dysphoria in clinical adults in our country. This research aimed to present those features of the male-to-female and female-to-male adults, adolescents and children seeking for medical, psychological and social help at the service. In addition, it has the objective to present the treatment guidelines especially created after a large background of the professionals of AMTIGOS. As for the topics of gender dysphoria treatment, this was established and shown to be of great value to both approach and caring of this population.

**NR4-018**

**GENDER DIFFERENCES AND VARENICLINE IN SMOKING CESSATION: FROM SIDE EFFECTS TO ABSTINENCE RATES.**

*Lead Author: Verena C.V. Santos, M.D.*
*Co-Author(s): André Malbergier, Ivan Mario Braun*

**SUMMARY:**

Context:
There is evidence that women have more difficulty to stop smoking than men. Women have more cravings and they are more responsive to negative emotions when trying to quit smoking. They are less successful at quitting and have lower adherence to treatment than men.
Additionally, a number of studies show that more men quit smoking than women after using Nicotine Replacement Therapy (NRT) and have higher adherence rates when using NRT. However, men and women have same results when using bupropion.
There are no studies comparing side effects, adherence and abstinence between men and women using Varenicline to the authors' knowledge.
Objective:
Assess gender differences in a Varenicline smoking cessation treatment, including side effects and treatment outcomes.
Methods:
124 smokers (50% men) were treated for Nicotine Dependence with Varenicline 1mg twice daily for 12 weeks and 6 sessions of cognitive behavioral therapy. They were evaluated biweekly. Participants' side effects were monitored using UKU side effects scale. Smoking Self-report and CO breath samples were used to assess abstinence during the course of treatment and at 6 and 12 month follow up.
X2 and Fisher Test were used to compare categorical data and Mann-Whitney test to analyze the association between gender, smoking initiation and number of cigarettes per day. Survival analysis was used to examine the association between gender and relapse and/or dropout across time.
Results:
Women had a higher score of side effects (UKU) throughout treatment (p= 0.03, 0.002 and 0.01) than men. Most common side effects in both men women were nausea, increased dream activity, reduced duration of sleep and headaches.
There was no statistical difference between men and women in treatment conclusion, 62.2% men and 57% women completed treatment (p=0.57). The number of men who quit smoking by the end of treatment is similar to women, respectively 54.5% and 61.1% (p=0.48). Likewise, there was no difference among gender in treatment dropout. Relapse rates and decreased in number of cigarettes smoked per day is also comparable between men and women.
Conclusion: Even though women had a higher score of side effects than men, there was difference between them in treatment outcomes.

**NR4-019**

**GUARDIANSHIP IN BRAZIL - A COMPARATIVE PERSPECTIVE**

*Lead Author: Ana-Letícia Santos-Nunes*
*Co-Author(s): Kátia Mecler, Ph.D., Alexandre Valença, Ph.D., Mauro V. Mendlowicz, Ph.D., Talvane Marins de Moraes, Ph.D.*

**SUMMARY:**

Since 1960s, a broad wave of legal reforms in the fields of personal autonomy, decision-making and guardianship has swept the developed countries, enhancing the visibility of these critical issues worldwide. Brazil, however, having only recently reformed its adult guardianship laws, remained relatively impervious to the new winds. This study intends to inform the discussion surrounding adult guardianship law reforms from an international and comparative perspective. For this purpose, Brazil, France, Germany, Italy and the United States legislations were chosen as the base for comparison. Each jurisdiction had its adult guardianship law examined, including the historical background and recent developments. We found that there has been a significant shift from a paternalist-based model to an individual-rights-based regime across many jurisdictions around the world. Unlike other countries, Brazil has failed to significantly modernize its guardianship laws and faces a growing challenge to adapt it to the currently accepted international standards.

**NR4-020**

**INCAPACITATED ADULTS IN BRAZILIAN CIVIL LAW**

*Lead Author: Ana-Letícia Santos-Nunes*
*Co-Author(s): Kátia Mecler, Ph.D.*

**SUMMARY:**

ABSTRACT
The imposition of guardianship creates important ethical, legal and practical challenges for the society, in general, and for the civil rights community, in particular. During the past 20 years, many countries have revised their guardianship laws or enacted comprehensive new provisions. However, very little is known about the reality of adult guardianship under the Brazil law. This study investigated the adult guardianship in Rio de Janeiro, Brazil, by examining court proceedings, with a particular focus on the profile of the wards, the reasons for requesting guardianship and the outcome of the wardship process. The study was a quantitative analysis, based on a random sample of 283 proceedings for legal guardianship of adults due to presumably impaired legal capacity. The legal papers of these cases were retrieved during the period extending form January 1st through December 31st, 2002 from four probate courts of the city of Rio de Janeiro that are specialized in cases of guardianship.

Our findings revealed that adult guardianship in Rio de Janeiro, Brazil, is often imposed to vulnerable sub-groups of the population, such as poor, single individuals suffering with mental retardation or dementia, who need a social security pension to provide for minimum subsistence.

**NR4-021**

**DEPRESSIVE DISORDER AND NICOTINE DEPENDENCE ARE ASSOCIETED WITH INFLAMMATORY AND OXIDATIVE STRESS MARKERS**

*Lead Author: Heber Odebrecht-Vargas H OVargas, M.D., Ph.D.*
*Co-Author(s): Sandra Odebrecht Vargas Nunes M.D. PhD., Márcia Regina Pizzo de Castro BSN, MS, Mateus Mendonça Vargas, medical student , Décio Sabbatini Barbosa Ph.D., Chiara Cristina Bortolasci ,M.S. , Luciana Vargas Alves Nunes , M.D., Ph.D , Seetal Dodd PhD., Michael Berk M.D. PhD.*

**SUMMARY:**

Objective: to assess the socio-demographic, clinical, inflammatory and oxidative stress biomarkers in depressed and non-depressed smokers comparing them to depressed and non-depressed never smokers subjects.

Methods: We selected 150 smokers (72 depressed and 78 non-depressed) recruited from outpatients at the Centre of Approach and Treatment for Smokers (CRATT), at the Londrina State University (UEL) and 191 never smokers (68 depressed and non-depressed 123) recruited from the same institution. All subjects had given informed consent to participate in this study, which was approved by the Ethics Research Committee at UEL. A structured questionnaire was used to gather information on socio-demographic, clinical risk screening of alcohol and smoking history. Major depressive disorder and tobacco use disorder were assessed by structured clinical interview, clinical version (SCID-I), based on DSM-IV. Inflammatory markers were measured by the following laboratory tests: C-reactive protein, erytrocytes sedimentation rate, homocysteine and fibrinogen. Oxidative stress was evaluated by the following tests: determination of malonic dialdehyde (MDA), lipid hydroperoxide determination, determination of metabolites of nitric oxide (NOx), determination of plasma total antioxidant potential (TRAP) and determination of advanced oxidation protein products (AOPP).

Results: Depressed smokers exhibited altered concentrations of NOx, lipid hydroperoxides, AOPP, TRAP, fibrinogen, were more unable to work, showed more severe depressive symptoms and higher suicide attempts rates as compared to non depressed smokers, depressed and non-depressed never smokers. Depressed smokers had significant levels of oxidative stress and inflammatory biomarkers after adjusting for gender, age, years of education, disability for work, and laboratory measures.

Conclusion: This study suggests that the comorbidity of depressive disorders and nicotine dependence shows greater severity of depressive symptoms and suicide attempts were more unable to work and showed altered levels of inflammation and oxidative stress biomarkers.

**NR4-022**

**PSYCHOSOCIAL SEQUELS OF SYRIAN CONFLICT.**

*Lead Author: M Khaldoun Marwa, D.P.M., M.D.*
*Co-Author(s): Ibrahim Marwa, MD*

**SUMMARY:**

PsychoSocial Sequels of Syrian Conflict.

M Khaldoun Marwa1, Ibrahim Marwa2

Background:

Victims of political violence and genocide survivors are highly vulnerable to mental and psychological distress. This study is one of the very few studies addressed the psychological sequels of Syrian conflict.

Objective:

To explore the level of psychological distress including depression, anxiety, and post traumatic stress disorder (PTSD) amongst Syrian Refugees in Syrian Turkish boarders and associate the level of distress to the sociodemographic characteristics.

Design:

A cross-sectional survey study.

Methods:

Three hundred surveys were distributed in four Syrian Refugee Camps located in South Turkey. Surveys included demographic data, Impact of Event Scale-Revised (IES-R), and Hospital Anxiety and Depression Scale (HADS). Snowball sampling method was utilized. Surveys missing any item were excluded. Data were processed and analyzed using SPSS v.16s. Frequency Tables and Chi Square were used.

Results:

178 of surveys were returned, making a response rate of (59.3%). 83 surveys were excluded due to missing data, and a total of 95 questionnaires were analyzed. The mean age was 34.2 years and the standard deviation was 11.9 years. 85.3% of respondents were males. According to IES-R, the prevalence of PTSD among our sample was 61.1%. According to HADS, 52.6% had pathologic anxiety, 19.0% were at borderline anxiety level, 53.7 % were pathologically depressed and 26.3% were at borderline depression level. There was a strong association with statistical significance between the refugees who had pathological anxiety symptoms and PTSD ($p<0.001$), while there was no statistical significant differences between PTSD and Depression in this sample. Anxiety, depression, and PTSD were not significantly associated with age, gender or marital status.

Conclusions:

The political violence practiced by the Syrian Regime during Syrian conflict resulted in a high level of psychological traumas. This represented strongly by the high level of PTSD amongst Syrian refugees in Syrian- Turkey borders which requires prompt crisis intervention campaign and urgent psychological support. Needless to say that further exploring researches are required

**NR4-023**

**CHARACTERIZATION OF OLFACTORY PSYCHOPHYSICS IN PATIENTS WITH BIPOLAR DISORDER DURING A MANIC EPISODE**

*Lead Author: Carolina R. Zárate, M.D.*
*Co-Author(s): Fernando Ivanovic-Zuvic, M.D, Jonathan Véliz, M.D*

**SUMMARY:**

INTRODUCTION Recent and increasing interest in olfaction and neuropsychiatric disorders is reported.There are relatively few studies that focus on bipolar disorder (BD) and even fewer on subjects presenting a manic episode. OBJECTIVE The following communication aims to characterize olfactory psychophysics in

patients with Bipolar Disorder during a manic episode and their association course and number of prior episodes
METHODS The group studied corresponds to Bipolar Disorder patients, hospitalized for a manic episode, at the Clínica Psiquiátrica Universitaria of the Universidad de Chile, Santiago, Chile. Subjects needed to score above 9 points in the Spanish version of the Young Mania Rating Scale (YMRS) and less than 5 points in the Spanish version of the Hamilton Scale for Depression (HSD) in order to be accepted in the study. 15 patients (men and women) were included in the study matched by age, gender and smoking behavior compared with 15 controls.
OLFACTORY PSYCHOPHYSIC Olfactory sensitivity was determined using a two- alternative reverse staircase detection procedure for an odorant, it was performed for two different odorants, isoamil acetate (an exclusive olfactory stimuli) and propionic acid witch stimulates olfaction as well as the trigeminal nerve.
Olfactory identification was determined with the "Sniffin Sticks", test created by Hummel.
The subjective sense of olfaction was also registered; same as always, augmented or diminished.
RESULTS Subjects with mania presented an augmented sensitivity for isoamil acetate as compared with controls (p=0.001) whereas no difference in sensitivity was found for propionic acid. These findings suggest that patients with BD cursing a manic episode present higher odor but not trigeminal sensitivity, than a control group. Our findings did not show an association between subjective sense of olfaction and augmented odor sensitivity for isoamil acetate. We found lower levels of odorant identification in subjects with a manic episode when compared to a control group. The number of past mood episodes was negatively correlated (0,58) with olfactory sensititvity to isoamil acetato. No correlation was found between, the number of past mood episodes ant other olfactory psychophysic measured. Our findings also found a correlation between olfactory identification and scores in the YMRS; patients with more symptoms of mania present diminished olfaction identification compared to a control group. CONCLUSION These findings suggest that subjects with BD in the curse of a manic episode present augmented odor sensitivity for isoamil acetato, and diminished odor identification when compared to a control group. Isoamil acetato olfactory sensitivity was correlated with the number of past mood episodes. These findings cannot be generalized to the all patients with BD, but contribute in the characterization of olfactory psychophysic in BD patients during a manic episode.

**NR4-024**
**SERTRALINE IN THE TREATMENT OF DEPRESSIVE DISORDER OF CHILDREN AND ADOLESCENTS**
*Lead Author: Marija Zuljan Cvitanovic, D.M.Sc.*
*Co-Author(s): Boran. U, Davor. L, Lukrecija. Milic.*

**SUMMARY:**
INTRODUCTION: Major depressive disorder in children and adolescents is associated with high risk of suicide and persistent functional impairment. While psychological treatments are used as a first line treatment in mild and moderately severe depression in this age group, the number of prescriptions for antidepressant medication (Selective serotonin reuptake inhibitors -SSRIs) has grown in recent years.
HYPOTESIS: The sertralnine is efficiently in reducing depressive symptoms of children and adolescents and does not increase the risk of suicidal.
METHODS: Forty patients with a moderate and a severe depressive symptoms, aged 8-19 years, met the diagnostic criteria for DSM-V. To asses the depressive symptoms we used The Hamilton rating scale for depression (HAM-D-21) before and 8 weeks after initiation of therapy with sertraline. The dose of the drug is titrated individually and ranged from 25 mg to 150 mg per day. The data obtained from the HAM- D -21 were processed by Wilcoxon test, nonparametric test for related samples.
RESULTS: Forty patients mean age 13.5 ± 3.3 years, 26 were female and 14 male. After 8 weeks of therapy HAM- D-21 scores were significantly reduced. (Wilcoxon test: p <0.01) The analysis of each items inicated the significant scores decrease on: item 11. Anxiety-somatic (somatic fear), item 10. Anxiety-psychic (psychological fear) and item 1. Depressed mood. (p<0.01). Statistically significant score decrease was on item 3.Suicide, as well.(p<0.05)
CONCLUSION: An eight-week follow-up therapeutic effect of sertraline in the treatment of moderate and severe depressive episodes showed that sertraline is an effective in treating depression in children and adolescents and did not increase the risk of suicidal thoughts and self harm.

**NR4-025**
**COMBINATIONS OF GENETIC DATA RELATED TO BIPOLAR DISORDER**
*Lead Author: Erling Mellerup*

**SUMMARY:**
Most molecular genetic studies of diseases use a single locus strategy, looking for genetic changes that are distributed significantly differently between controls and patients; however even the changes with the lowest p values are found in both groups. In contrast the specific combinations of genetic changes being the basis for a heritable polygenic disease are found exclusively in patients or their relatives. The poster shows such combinations of SNP genotypes significantly associated to bipolar disorder and found exclusively in the patients.

**NR4-026**
**FEASIBILITY OF GROUP-BASED ACCEPTANCE AND COMMITMENT THERAPY FOR SEVERE SOMATIC SYNDROMES IN ADOLESCENTS: A PILOT STUDY**
*Lead Author: Charlotte U. Rask, M.D., Ph.D.*
*Co-Author(s): Per K. Fink, M.D., Ph.D., DMSc., Karen K. Hansen, M.D., Tua Preuss, Cand. Psych., Andreas Schröder, M.D., Ph.D.,*

**SUMMARY:**
Introduction: Approximately 5-10% of adolescents experience recurrent somatic symptoms which cannot be explained in terms of a well-defined medical disease and are hence 'stress-related' or 'functional'. Due to their symptoms these adolescents are at risk of social isolation, long term school-absence and reduced quality of life and may receive diagnoses for somatic syndromes (SS) such as chronic fatigue syndrome, fibromyalgia, recurrent abdominal pain/irritable bowel syndrome or idiopathic pain syndrome. Whereas a range of SS in adults have been shown to be managed effectively be means of psycho-

logical treatment, primarily cognitive behavioural therapy, the evidence for adolescents is sparse. The aim of this pilot study was to evaluate- as a first step prior to a larger randomised controlled trial - the feasibility of group-based Acceptance and Commitment Therapy (ACT) for severe SS in adolescents.
Methods: A group (N=6) of young patients attended a manualised ACT- programme, specifically developed for adolescents (aged 15-19 years) with severe SS. The programme consisted of eight weekly 3 hours group sessions, and one booster session after one month. The patients' parents took part in a two hours workshop in the beginning of the group therapy. Two short questionnaires (Patient Satisfactory Form and a modified version of the Experience of Service Questionnaire (ESQ)) were completed after the last session to evaluate the patient's opinions of the treatment. Answers were either on a Likert 1-5 scale ('unacceptable' to 'excellent') or with three response options: 'true', 'somewhat true' or 'not true'.
Results: All participants found the treatment good to excellent and agreed that the overall help they had received was good. All six participants also agreed they had learnt something new and worthwhile and would recommend the treatment to a friend with similar problems as well as planned to use what they had learned in the future including various mindfulness exercises. The poorest scoring aspects were regarding if the patients had completed the assigned homework with three totally agreeing and three partly agreeing and regarding the need for more hand-out material during the sessions with only one participant partly agreeing and five not agreeing. Results based on more patients expect to be presented at the meeting.
Discussion/Conclusion: Overall the ACT-based programme was well received by these young patients. A randomised controlled trial is being planned to evaluate the treatment effects by the use of self-reported outcome measures (symptom interference, functional impairment) as well as by objective markers such as physiological stress response and altered pain perception.

**NR4-027**

**OUTCOME OF COGNITIVE BEHAVIORAL THERAPY FOR PATIENTS WITH SEVERE HEALTH ANXIETY TREATED IN GROUPS. A RCT PROTOCOL (THE CHAG-TRIAL).**

*Lead Author: Mathias Skjernov, M.D.*
*Co-Author(s): Brian Fallon, M.D., Ph.D., Per Fink, DMSc., Erik Simonsen, M.D., Ph.D., Ulf Soegaard, M.D.*

**SUMMARY:**

Background:
The prevalence of severe health anxiety is reported to be 1-2% in western communities. This functional disorder is difficult for medical doctors to treat, the course of the disorder is therefore often chronic, and that is costly for the social and health care systems as well as for the patients. A Cochrane metaanalysis from 2009 finds evidence for effectiveness of individual cognitive behavior therapy (CBT) for patients with hypochondriasis. But no randomised controlled trials (RCT) of the effectiveness of classical CBT delivered only in groups for patients with severe health anxiety (hypochondriasis/illness anxiety disorder) has yet been conducted.
Aims:
1) to examine the effectiveness of group-CBT for patients with severe health anxiety compared to a wait-list group receiving usual care, 2) to perform a categorical and dimensional assessment of personality, 3) to examine predictors of outcome especially comorbid personality disorders, 4) to examine the relation between personality, illness perception and treatment outcome, 5) to compare the cost-effectiveness of these two treatments.
Methods:
84 patients referred from medical doctors during 2013-15 to the Clinic of Liaisonpsychiatry in Koege, Region Zealand, Denmark, will be included and block randomised per 14 patients to either weekly group-CBT with 7 patients and 2 therapists for 3 hours a week in 12 weeks or usual care for 9 months.
Inclusion: Severe health anxiety (dominant mental disorder), score on WI-7>21,4, age between 18-65 years, danish speaking, informed consent.
Exclusion: Another severe treatment demanding mental disorder, risk of suicide or psychosis, a serious somatic disease, pregnancy, dependency of drugs, alcohol or medication.
Diagnostic assessment:
The patients are included using research criteria for severe health anxiety (for ICD-11) and semi-structured interviews developed for DSM-IV, SCAN (general psychopathology) and SCID-II (personality disorders). Criteria for hypochondriasis from ICD-10 and illness anxiety disorder/somatic symptom disorder from DSM-5 are used for subcategorising. Dimensions and traits of personality are assessed by the questionnaire PID-5 included in DSM-5, section III.
Outcome measures:
The primary outcome measure is the questionnaire for health anxiety, Whiteley Index 7 (WI-7), with a cut-off for remission on 21,4 or a blinded diagnostic assessment of no severe health anxiety present 6 months after end of treatment.
The secondary outcome measures are questionnaires for health anxiety (HAI), general psychopathology(SCL-90-R), level of personality disorders (PID-5), level of functioning (SF-36), Illness perception (IPQ), alcohol consumption (CAGE) and register data for number of sick days and use of social and health care.

**NR4-028**

**A DESCRIPTIVE STUDY OF CHILDREN WITH FUNCTIONAL SOMATIC SYMPTOMS REFERRED TO CHILD AND ADOLESCENT MENTAL HEALTH SERVICES**

*Lead Author: Simone Tøt-Strate, B.Sc.*
*Co-Author(s): Gitte Dehlholm, M.D., PhD., Charlotte U. Rask, M.D., PhD.*

**SUMMARY:**

Introduction/Hypothesis Recurrent physical symptoms with no medical explanation, often named functional somatic symptoms (FSS), affects 10-25% of children and adolescents, and often leads to referral to paediatric settings for further investigations. Only a small group of children with these symptoms are referred to The Child and Adolescent Mental Health Services (CAMHS). However currently no specific guidelines for referral exist. The objective of this study, is therefore to characterize those children with FSS who are referred to CAMHS with regard to clinical and anamnestic characteristics.
Methods The study population consists of 1) children admitted to the Department of Paediatrics Odense in 2012 and who received discharge diagnoses related to functional symptoms (according to ICD-10) and 2) children referred to CAMHS Odense in 2012. Discharge summaries of all medical records

were evaluated by 2 child and adolescent psychiatrists and 1 paediatrician and categorised as reporting no, possible or definitely FSSs. All children with FSS were included, and the medical records of the referred and non-referred groups were evaluated by a standardised medical records review. The medical records review was developed for this study specifically, in cooperation with psychiatrists and paediatricians. The review includes items regarding sociodemographic data, early child development, physical and mental illness in the family, negative life events, co morbidity, characteristics of functional symptoms and impairment in everyday life.
Results Collection of data is still in process and is expected to be concluded mid-February. Afterwards, the group of referred children will be compared to the group of non-referred children with respect to:
- sociodemographic data
- occurrence of pseudoneurological and somatoform symptoms
- occurrence of negative life events and co morbidity
- the degree of impairment and duration of symptoms

Conclusions/discussion At the present time, knowledge of characteristics of children with FSS referred to The CAMHS is sparse. This study is one of its first, to systematically describe the anamnestic and clinical factors of importance in the process of referral of children with FSS to the CAMHS, and whether these factors correspond to the few guidelines described in international literature. Potential the results will be able to identify factors of importance to the process of referral and thereby constitute empirical basis for developing more specific guidelines for the referral of children with FSS to Child and Adolescent Mental Health Services.

**NR4-029**

**RELATIONSHIP BETWEEN REGIONAL BRAIN VOLUMES AND CORE SYMPTOMS OF SCHIZOPHRENIA, A CASE CONTROL STUDY**

*Lead Author: Ahmed Mubarak, M.B.B.S., M.D., M.S.*
*Co-Author(s): Adel Badawy, MD*
*Rasha El-Shafey, MD, Rania Meshrif, MBBS*

**SUMMARY:**

Objectives: to find differences in volumes of prefrontal cortex (PFC), hippocampus, (HC) and cerebellum (CRM) between schizophrenic patients and healthy control, and any correlation between volumes of these areas and core symptoms of schizophrenia (positive, negative and cognitive).
Methods: Twenty schizophrenic patients; selected randomly; from those attending department of neuropsychiatry, Tanta university hospital, Egypt and 20 healthy individuals matched with patient's age, gender, education and culture as control. Informed consent and the standards of ethical review board (ERB) were fulfilled before including any of them in the study. )]. Schizophrenia diagnosis was according to DSM-IV-TR and symptoms assessed by positive and negative syndrome scale (PANSS). The images were acquired using a 1.5-T General Electric MRI scanner with quadrature head coil (8 channels), sedation was needed for 10 uncooperative patients. Volumetric calculation and analysis was done using 3D Slicer version 4.2.2 software, which is a multiplatform, free and open source software package for visualization and medical image computing developed by Harvard University. Cognitive tests was conducted for both patients and control [Folstein Mini Mental State Examination (MMSE), trail making test(TM) and Wechsler Memory Scale (WMS
Results: significant reduction of volumes of PPC [right p=0.006, left p= 0.009], HC [right, p= 0.042,] and CRM [right, p= 0.25, left p= 0.041, vermis p= 0.02] in patients than control. Reduction of the score of MMSE (p= 0.001), all WMS sub tests (p<0.005) and delay of TM time in its two stages (p<0.01) in patients than control. In schizophrenia, PANSS positive symptoms score was negatively correlated with HC volume on both sides (p=0.01) and positively correlated with cerebellar vermis (p=0.007). PANSS negative symptoms score was negatively correlated with right CRM lobe volume (p< 0.001) and vermis (p<0.001). MMSE score is positively correlated with PFC volume on both sides (left, p= 0.02, right, p= 0.002) and negatively correlated with left CRM lobe volume (p=0.009). The delay in TM is correlated with the volume of vermis in both stages of the test (stage I p<0.05, stage II p<0.004). WMS auditory component is positively correlated with left PFC (immediate, p=00.009; delayed p=0.021) and with vermis volume (immediate, p=0.003; delayed p= <0.001). Visual memory score is positively correlated with the left PFC volume (immediate, p =0.014; delayed, p =0.022 and negatively correlated with HC volume in both sides (p= 0.008) and left CRM lobe volume (p= 0.014). Working memory score is positively correlated with both CRM lobe volumes (p=0.003).
Conclusion: volumes of prefrontal cortex, hippocampus and cerebellum are smaller in schizophrenics compared to control and are correlated with core s symptoms (positive, negative and cognitive).

**NR4-030**

**PSYCHIATRIC MORBIDITY AND QUALITY OF LIFE IN CARDIAC PATIENTS**

*Lead Author: Samah H. Rabei, M.D.*
*Co-Author(s): Mostafa Ahmed Bastawy, M.D.*

**SUMMARY:**

Aim of the study
The study aims to detect Psychiatric morbidity, Suicidality and QoL in Egyptian cardiac patients.
Background
Cardiac patients have increased rates of Psychiatric morbidity, Suicidality and unsatisfactory QoL.
Subjects and Methods
Sixty patients were recruited from the outpatient clinic from Misr university hospital).
They were assessed using the ICD10 criteria, and the Arabic version of the World Health Organization Quality of Life Questionnaire (WHOQOL-100).
Results and Conclusion
Egyptian cardiac patients have increased rates of Psychiatric morbidity and unsatisfactory QoL.

**NR4-031**

**OLFACTORY IDENTIFICATION AND EEG IN A SAMPLE OF SCHIZOPHRENIC PATIENTS AND THEIR FIRST DEGREE RELATIVES AS AN ENDOPHENOTYPE FOR SCHIZOPHRENIA**

*Lead Author: Hoda Salama*
*Co-Author(s): Molokia K. Tarek, M.D., Mohamed A. Nada, M.D., Tahoon A. Soliman, M.D.*

**SUMMARY:**
OBJECTIVE:
Investigations of the genetic basis for mental disorders have recently focused on Endophenotypes as alternative phenotypes reflecting internal phenomena of organisms that define elements of mental disorders proximal to effects of genes.
Olfactory deficits and abnormal resting state electroencephalogram (EEG) are among endophenotypes that have been reported in patients with schizophrenia. This study assessed olfactory function and resting state EEG abnormalities in patients (first episode and chronic schizophrenic patients) and again in the healthy first degree family members of schizophrenic patients to determine genetic liability for the disorder.
METHODS:
The University of Pennsylvania Smell Identification Test (UPSIT) was administered birhinally to three groups of subjects aged less than 65 years: 30 schizophrenic patients, 30 healthy first degree family members and 30 age- and sex-matched healthy volunteers. Resting EEG data were also collected from the study groups. The study was a case control retrospective study and the statistical methods were
analysis of variance (ANOVA), student t test and cross tabulation using chi-square
RESULTS
A high percentage of schizophrenic patients (both first episodes and chronic patients) were microsmic compared with control subject (P=0,000*). However there was no significant statistical difference between first episode patients and family group (P=0.915). The family group showed significantly statistical difference in UPSIT score compared to control subjects (P=0,001*).These group differences could not be accounted for by age, sex, medication exposure, education or smoking habit.
Schizophrenic patients had no significantly statistical difference (on the augmented low frequency-delta component than did normal control subjects p=0.167), and there was no significant difference in scores on the delta component between first episode and chronic schizophrenic patients (P=713). In the family group no significant difference on the augmented low frequency-delta component than did normal control subjects (p=176).
CONCLUSIONS
Impairment in olfactory identification ability was present from the onset of psychotic illness which suggests central causes. Olfactory identification deficit aggregates in healthy first-degree family members which may serve as a strong endophenotypic vulnerability marker.
The findings of Resting state EEG collected from the study groups suggest that there is EEG abnormalities in schizophrenia patients and their first degree healthy family members , but because small sample size the data wasn't' conclusive and needs to be repeated on larger sample size.

**NR4-032**

**THE LONGITUDINAL COURSE OF SLEEP TIMING AND CIRCADIAN PREFERENCE IN ADULTS WITH BIPOLAR DISORDER**

*Lead Author: Mohammad A. Seleem, M.D.*
*Co-Author(s): Mohammad Seleem, M.D., John Merranko, M.A., Tina Goldstein, Ph.D., Benjamin Goldstein, M.D., Ph.D., David Axelson, M.D., Boris Birmaher, M.D.,*

**SUMMARY:**
OBJECTIVE: Sleep and circadian disturbances are well documented findings in adults with bipolar disorder (BP). However, it is not yet clear whether these changes are specific for BP. In addition, the longitudinal course of circadian and sleep timing patterns in BP has not yet been investigated. The aim of this study was to evaluate the longitudinal course of sleep timing and circadian preferences in adults with BP compared to those with non-BP psychopathology, and healthy controls.
METHOD: Subjects with BPI/II (n=336), non-BP psychopathology (n=133), and healthy controls (n=84) were followed for a mean of 3.6 years (median=3.0; SD=1.9). Sleep timing parameters and circadian preference were reported using the Sleep Timing Questionnaire (STQ) and The Composite Scale for Morningness (CSM). Group comparisons were adjusted for between-group differences in demographic variables, psychopharmacological treatment, and comorbid psychiatric disorders and adjusted with Bonferroni.
RESULTS: Subjects with BP reported persistently more evening preference, less sleep efficiency and less stability of bed and wake-up times in comparison to adults with non-BP psychopathology and healthy controls. Within BP group, those suffering from BP-I and those with any type of mood episodes at the time of evaluation reported more disturbed sleep timing, but not circadian preference, as compared to those with BP-II and euthymic subjects respectively.
CONCLUSIONS: Evening preference, difficulty falling and staying asleep and unstable bed and wake-up times are prominent and persistent traits in adults with BP and they differentiate them from subjects with non- BP psychopathology. Further research is needed to explore the potential significance of these findings in improving outcome and quality of life of subjects with BP.
Key Words: Bipolar Disorder, Sleep, circadian, morningness, eveningness.

**NR4-033**

**A 5-YEAR PROSPECTIVE STUDY OF PREDICTORS FOR FUNCTIONAL AND WORK DISABILITY AMONG PRIMARY CARE PATIENTS WITH DEPRESSIVE DISORDERS**

*Lead Author: Kirsi Riihimäki, M.D.*
*Co-Author(s): Erkki I. Isometsä, M.D., Ph.D., Maria S. Vuorilehto, M.D., Ph.D.*

**SUMMARY:**
Introduction: We report the first prospective long-term study on predictors for functional and work disability among primary care (PC) patients with depressive disorders.
Methods: The Vantaa Primary Care Depression Study followed up prospectively 137 patients with depressive disorders for 5 years with a life chart. Information on level of functioning in general and in different dimensions, employment, sick leaves and disability pensions were obtained from interviews and patient records.
Results: Level of functioning and work ability were strongly associated with time spent depressed and/or current severity of depression. Patients who belonged to the labor force at baseline spent one-third of the follow-up off work due to depression; two-thirds were granted sick leaves, and one-tenth a disability pension due to depression. Longer duration of depression, co-morbid disorders and having received social assistance predicted dropping out from work.
Conclusions: Duration of depressive episodes appears decisive

for long-term disability among PC patients with depression. Patients spent one-third of the follow-up off work due to depression, and remaining outside the labor force is a common outcome. Psychiatric and somatic co-morbidities, education and socio-economic means influence the level of functioning and ability to work, but are not equally important for all areas of life.
Key words: primary care; depressive disorders; social, occupational and family functioning; work disability

**NR4-034**
**SUICIDE ATTEMPTS AND MORTALITY IN EATING DISORDERS**
*Lead Author: Jaana T. Suokas, M.D., Ph.D.*
*Co-Author(s): Jaana M. Suvisaari, M.D., Ph.D. , Marjut Grainger, Milla S. Linna, M.D., Anu Raevuori, MD, Ph.D., Mika Gissler, Ph.D., Jari Haukka, Ph.D.*

**SUMMARY:**
Objective: Investigate the prevalence of hospital-treated suicide attempts in a large clinical population of eating disorder patients.
Method: Follow-up study of adults (N=2462, 95% women, age 18-62) admitted to the Eating Disorder Clinic of Helsinki University Central Hospital in the period 1995-2010. For each patient four controls were selected and matched for age, sex and place of residence. The end-point events were modelled using Cox's proportional hazard model taking matching into account.
Results: We identified 156 patients with eating disorder (6.3%) and 139 controls (1.4%) who had required hospital treatment for attempted suicide. Of them 66 (42.3%) and 37 (26.6%) had more than one attempt. The rate ratio (RR) for suicide attempt in patients with eating disorder was 4.70 (95% Cl 1.41-15.74). In anorexia nervosa RR was 8.01 ((95% CL 5.40-11.87) and in bulimia nervosa 5.08 (95% CL 3.46-7.42). In eating disorder patients with a history of suicide attempt, the risk of death from any cause was 12.8%, and suicide was the cause of death in 45% of the cases.
Conclusion: Suicide attempts among patients with eating disorders are common. Suicidal ideation should be a routinely asked from patients with eating disorders.

**NR4-035**
**CASE REPORT: ORGANIC BRAIN SYNDROME AND EPILEPTIC SEIZURES: CEREBRAL MANIFESTATION OF ALPORT SYNDROME?**
*Lead Author: Thomas Sobanski, M.D.*
*Co-Author(s): Gerd Wagner, Ph.D., Jürgen Deckert, M.D.*

**SUMMARY:**
Introduction: Alport syndrome is a hereditary disease characterized by nephropathy, cochlear hearing loss and eye damage (retinitis pigmentosa, cataract, lenticonus). In most of the patients (about 85%), the condition is inherited in an X-linked dominant pattern, due to mutations of the COL4A5 biosynthesis gene. Alport syndrome may also be caused by mutations in COL4A3 and COL4A4 genes. Mutations in any of these genes prevent the proper production or assembly of the type IV collagen network, which is an important structural component of basement membranes in the kidney, inner ear, eyes, and the skeletal muscles.
Case report: This 42 year-old female patient had suffered from Alport syndrome for at least 16 years. The first symptoms were retinitis pigmentosa, cataract, and hypoacusis. Renal function initially was normal. At the age of 34 years the patient developed epilepsy with tonic clonic and psychomotor seizures. Simultaneously mild organic brain syndrome occurred. The diagnosis of Alport syndrome was histologically confirmed by biopsies of the kidney and the skeletal muscles.
Discussion: In the literature there are some reports of psychotic symptoms in patients with Alport syndrome. Also there is one report of epilepsy. Molecular-biological studies have revealed that type IV collagen is also a constituent of basement membranes in the brain. In the light of these findings psychic alterations and epilepsy in our patient may be viewed as cerebral manifestations of the Alport syndrome.
Conclusions: Patients with Alport syndrome should be examined thoroughly for psychiatric or neurological symptoms. Other abnormalities than reported in our patient may occur.

**NR4-036**
**A COMPARATIVE STUDY OF THE EFFECTIVENESS OF COMBINED INPATIENT TREATMENT FOR SEVERE PERSONALITY DISORDERS**
*Lead Author: Grigoris Vaslamatzis, M.D., Ph.D.*
*Co-Author(s): Panagiotis N.Theodoropoulos, M.D.,Stamatia N.Vondikaki, M.D.*

**SUMMARY:**
A comparative study of the effectiveness of combined inpatient treatment for Severe Personality Disorders
Aim : is to evaluate the impact of combined inpatient treatment-medication plus psychodynamic psychotherapy- on patients' suicidality and impulsivity.
Methods: A total of 33 patients suffering from Severe Personality Disorder (SPD) were assessed with SCID II(First MB et al, 1997) and two self-reported scales, the Impulsivity Scale and the Suicide Risk Scale (Plutchik and van Praag, 1989) at intake and at the end of therapy. Suicidality and Impulsivity were selected as outcome variables since they appear as substantial criteria in the diagnosis of the four personality disorders that constitute the "dramatic cluster (B)" of DSM-IV personality disorders The sample of 33 inpatients with SPD were allocated at two subgroups (Group A & B). Patients in group A received psychodynamic psychotherapy and adjunctive pharmacotherapy while patients in group B received multimodal psychodynamic psychotherapy only.
Results Both outcome variables decreased significantly for all participants, following inpatient treatment. A statistically significant reduction in suicidality score was observed in group A patients, whereas a tendency for significant reduction in impulsivity score was observed in group B following the termination of therapy.
Comments : Pharmacotherapy combined with multimodal psychodynamic psychotherapy seems more effective in the case of suicidality rather than impulsivity.

**NR4-037**
**ETHICAL PROBLEM IN PSYCHIATRY PRACTICE OF DEVELOPING COUNTRY**
*Lead Author: Amarnath Mallik, D.P.M.*

**SUMMARY:**

Introduction- Ethics are important in medicine and more so in psychiatry since psychiatry deals mainly with human conduct and behaviour. No area of medicine is so concerned with ethics as the field of psychiatry. Ethics are principles, not laws but standards of conduct, which define the essentials of honourable behaviour for the physician. In 18th century Thomas Perical wrote a code of ethics. Indian Psychiatric Society approved ethical guideline in 1989 Cuttack conference.
But in reality ethics in psychiatry is usually wrongly stated or assumed in India. This is because psychiatry remains a low priority in relation to other branches of medical science in our country. Apathy and ignorance of family members of mental patients, social stigma, unpredictable prognosis and variable treatment modalities are the probable reasons. In spite of low priority psychiatric disorders are amongst the important contributors of the "Global burden of Disease and Disability".
Hypothesis- treating psychiatric patients routinely in private clinic requires psychiatrists to confront basic ethical dilemmas. These are 1) Restricting individual freedom 2) Treating against will 3)Force for inpatient treatment.
Ethical issues depend on the following theories –
Utilitarian Theory – A fundamental obligation in making decision and is to try to produce the greatest possible happiness for the greatest benefit.
Parentalism- A person performing actions for another benefit without the person's consent. Physicians are supposed to treat patients as a caring parent would treat a young child.
Autonomy Theory – It is based on writing of Imanuel Kant. Relationship between a physician and an adult patient is conceived as relationship between two responsible persons.
Observation – Some common causes of malpractice ( Law suits) in psychiatry seen in India are i) Negligence in diagnosis ii) Overlooking basic human rights iii) Consent not taken from patient iv) Risk of suicide v) Experimentation by doctor vi) Negligence in physical methods of treatment vii) Seaxual relation with client and Exploitation.
Conclusion – Now a days following forces are to be conside

**NR4-038**

**PREVENTION OF AIDS AND CRITICAL ROLE OF COUNSELING IN DEVELOPING COUNTRY**

*Lead Author: Debanjan Pan, M.D.*

**SUMMARY:**

Introduction - AIDS – a global problem, a global challenge and response. In the absence of medical defences against AIDS, a mass education and counselling services are main weapons in the fight against HIV/ AIDS in a developing country like India. I.C.M.R and WHO suggests that more than one billion of Indian population are HIV - Positive ( 0.7%) with 3.9 million positive cases. One of the key components in strategy to prevent HIV – infection and to provide care to the persons with AIDS in counselling. It is an client centred interpersonal therapy.
Hypothesis – Counselling can be useful to seropositive persons, AIDS- victims and their family members. Counselling helps in community awareness, to establish legal and human rights of the AIDS patients and to overcome stigma and prejudices.
Method- 144 HIV – seropositive patients were referred to the Dishari Counselling Centre. Case histories and clinical along with psychological evaluation was done. G.A.F and B.P.R.S were used. Individual and group counselling done according to the need for 3 months. 16 HIV patients used to attend Medical College regularly along with counselling.
Results- GAS and BPRS shows 30% improvement. Detailed result will be discussed in presentation.
Discussion – In a developing country like India, with second highest population, counselling is important method to increase self – reliance and self esteem of HIV – Positive persons. It helps the seropositive and HIV patients to understand the necessity of protecting themselves and family members.

**NR4-039**

**EFFICACY OF FLUOXETINE IN DEVELOPMENTAL COORDINATION DISORDER IN CHILDREN**

*Lead Author: Debanjan Pan, M.D.*
*Co-Author(s): Debanjan Pan, M.D., Amarnath Mallik, M.D., Malay Sarkar, M.D., Shyamal Chakraborty, M.D.*

**SUMMARY:**

Introduction: Developmental Coordination disorder (DCD) is a motor skill disorder that interferes with children's ability to perform day to day activities in ~5-6% of otherwise healthy school-age children (majority boys). In addition to their motor coordination problem it generally interferes with academic performance, social integration and self esteem.
Hypothesis: DCD is a heterogeneous disorder with varied etiology; hence, there is no specific pharmacotherapy. Intervention, therefore, mostly includes occupational therapy, parent education and management of coexisting problems. The present study aims to assess any possible role of Fluoxetine in these children.
Methods: 16 healthy boys were recruited from a child development clinic in north Kolkata, age 8-12 yrs, clinically diagnosed with DCD. Inclusion Criteria: Diagnosis of DCD, based on DSM IV criteria and a score below the suspected clinical cutoff on the Parent-reported Movement Assessment Battery for Children-Checklist for DCD (<15th percentile). Exclusion Criteria: 1) Intellectual disability; 2) ADHD; 3) orthopedic or rheumatologic impairments; 4) Tic disorders; 5) acquired brain injury; 6) severe sensory loss (visual /auditory); 7) other psychiatric disorders.
Procedure: Participants were randomly divided into 2 groups. One who would receive Fluoxetine (Experimental) and the other who would receive Placebo (Control). Fluoxetine was administered in the dosage of 10mg/day and continued for a period of 3 months. Participants were followed up periodically for any adverse effects, which were negligible in the present study and there was no drop out.
Assessment: Participants were assessed using Children's Global Assessment Scale (CGAS) at the beginning and end of the study period (3 months) and were statistically analyzed.
Results: Significant difference between the mean score of the control and the experimental group at the outset of the study was not found from the computed t score. Furthermore, there was no significant difference between mean global score of the control group before and after placebo administration was found. Finally, when t score was computed in the experimental group before and after administration of Fluoxetine, statistically significant difference in the mean global score was noticed.
Discussion: It is an established fact that a condition like DCD doesn't really improve on pharmacotherapy. Hence, Fluoxetine, an SSRI and the most commonly prescribed antidepressant for

children, cannot be expected to bring any change in the motor functionality of the children suffering from DCD, but, as the present study suggests, it may help the victims cope with the disorder better, probably by boosting self esteem.
Conclusion: It can be concluded that participants responded better after administration of Fluoxetine in comparison to the ones who received placebo when overall clinical assessment was concerned.

**NR4-040**
**NOVEL TREATMENTS IN BIPOLAR DISORDER : FUTURE DIRECTIONS**
*Lead Author: Debashis Ray, D.P.M., M.B.B.S.*

**SUMMARY:**
Bipolar disorder is a common , severe, recurring and often chronic illness characterized by episodes of mania, hypomania and depression occurring singly or as mixed episodes. It is associated with high rates of mortality including suicide , high risk of physical morbidity like cardiovascular disease, cycle acceleration, residual symptoms, co-morbidities, cognitive and functional impairments and psychosocial disability. The limitations of the existing treatments ,including mood stabilizers or atypical antipsychotics , are being exposed progressively in terms of both efficacy (therapeutic inadequacy specially concerning residual symptoms, cognitive symptoms and control or prevention of breakthrough symptoms) and tolerability ( adverse effects including metabolic syndrome).The search for newer therapeutic targets in bipolar disorder has been guided by :

i. The understanding of the pathophysiology
ii. The exact neurochemical targets of the existent mood-stabilisers and other agents.

Based on this, there are several promising domains of psychobiology on which novel and better treatments of bipolar disorder may be designed. These include:

I. Neurotropic cascades

There is potential role of brain derived neurotropic factor(BDNF),phosphodiesterase inhibitors and the BCL-2 family of proteins

II. Intracellular signaling cascades

PKC (Protein Kinase C) is a family of enzymes intracellular mediators. Tamoxifen which is a PKC inhibitor is found to reduce manic symptoms significantly within a very short period.

GSK-3 (Glycogen synthase kinase ) is another pro-apoptotic intracellular target.

Intracellular calcium is found to be increased in bipolar disorder. Verapamil,nimodipine and other dihydropyridine-L-type calcium channel blockers may show a broader spectrum of effects in bipolar disorder.

III.Neuropeptides and the HPA Axis

CRF1 receptor antagonists, glucocorticoid receptor antagonists, thyrotrophin-releasing hormone(TRH), glutamatergic release inhibitors like riluzole , NMDA receptor antagonists like ketamine have been studied.

IV. Heavy metals

Zinc as a transmitter in the dentate granule cells (along with glutamate) is promising.

Homocysteine has been associated with cognitive deficits and residual symptoms in bipolar disorder. Folate,B12 and agents lowering homocysteine levels have shown promos in preliminary clinical trials.

V. Neurostimulation

Transcranial magnetic stimulation (rTMS) and vagal nerve stimulation (VNS) have been studied.

**NR4-041**
**AN EPIDEMIOLOGICAL STUDY OF DEPRESSION IN WOMEN IN CHILD-BEARING AGE GROUP AGE BETWEEN 18 TO 35 YEARS FOLLOWING TUBAL LIGATION IN A RURAL INDIA**
*Lead Author: Malay Sarkar, M.B.B.S., M.D.*
*Co-Author(s): Dr Debanjan pan MBBS,DCH,MD*

**SUMMARY:**
In this study there were 371 major depressive disorder female patients of age group between 18 to 35 years randomly chosen. Major Depressive disorder(MDD) was diagnosed with the DSM-4 criteria.Out of them 86 patients had the history tubal ligation.
Inclusion Criteria:Age group between 18 to 35 years,All female patients,Educational back ground is below ten class pass,Resident of a rural village in India,MDD according to DSM-4 criteria.
Exclusion Criteria:Any major medical conditions,mentally retarded.
Duration of study:6 months
Study design:All patients were asked for history of tubal ligation,educational back ground.
Result:Findings revealed that prevalence of depression in the sample population was 23.18% due to tubal ligation.
conclusion:poor awareness is a key public health problem. Society plays an important role in this issue.Proper knowledge regarding the tubal ligation in low socioeconomic group of female patients in child bearing age group essential that it does not cause any harm to the body as well as mind.

**NR4-043**
**ISRAELI ADOLESCENTS' EXPOSURE TO POLITICAL VIOLENCE AND POSTTRAUMATIC SYMPTOMS: THE ROLE OF RELIGIOSITY AND HOPE**
*Lead Author: Miriam Schiff, Ph.D.*
*Co-Author(s): Miriam Schiff, Ph.D. Hebrew University Jerusalem, School of Social Work and Social Welfare*
*Efrat Sakat, MSW. Hebrew University Jerusalem, School of Social Work and Social Welfare*

**SUMMARY:**
This study, conducted in 2007, examined physical (direct and indirect) and psychological (direct and indirect) exposure to acts of political violence and its associations with posttraumatic stress symptoms (PTSS). It had two main objectives: (1) exploring the differential effect of objective exposure (i.e., residential area close to, or distant from, falling rockets) versus subjective exposure (individual's report of his/her exposure) to acts of political violence; and (2) Exploring whether hope and religiosity serve as protective factors, that is, do they act as moderators in the association between exposure and PTSS. The study is based on Conservation of Resources theory (COR) (Hobfoll, 1998) that states that the existence of internal (e.g., religiosity) and external (e.g., hope) resources may mediate or moderate the associations between traumatic events and non-adaptive responses.
Two thousand nine-hundred and ninety-two Jewish students in grades 10 and 11 were recruited in a nationwide representative

sample. Physical (proximity to falling rockets and self-report) and psychological (direct and indirect) exposure to acts of political violence, posttraumatic symptoms (Revised Impact of Event Scale; Weiss & Marmar, 1997), hope (Child's Hope Questionnaire; Snyder et al., 1997) and religiosity were assessed. Results of hierarchical multiple regression analysis showed that objective physical exposure (i.e., living in north or south Israel vs. the center of Israel) was significantly associated with PTS. Nonetheless, subjective exposure (students' report) to all types of exposure, physical or psychological, was also associated with PTS once objective physical exposure was controlled. Hope was significantly inversely associated with PTS and it also moderated the associations between subjective physical exposure and PTS; exposure had a greater effect on PTS when students hope was low. Religiosity did not serve as a protective factor and in some cases was even a risk factor for higher levels of PTS; religious students reported greater PTS and direction of the interactions do not show religiosity as a resource.
In conclusion, objective measures for physical exposure to acts of political violence are important, but subjective measures also provide critical information on adolescent distress. Hope, unlike religiosity, was found to be a resource. Thus, practitioners would do well to take hope into account when designing interventions for promoting resilience in the context of mass trauma such as exposure to political violence. Further, common wisdom that relates religiosity with resilience should not be taken at face value. In fact, religious youth, at least in Israel, may be a vulnerable population in the context of exposure to political violence.

**NR4-044**

**SEXUAL ENHANCEMENT PRODUCTS FOR SALE ONLINE: RAISING AWARENESS OF THE PSYCHOACTIVE EFFECTS OF YOHIMBINE, MACA, HORNY GOAT WEED AND GINKGO BILOBA**

*Lead Author: Giovanni Martinotti, M.D., Ph.D.*
*Co-Author(s): Rita Santacroce M.D., Ornella Corazza PhD, Eleonora Chillemi Psy D., Luigi Janiri M.D., Fabrizio Schifano, M.D., Massimo Di Giannantonio M.D.*

**SUMMARY:**
Introduction: Recently, the use of food and herbal supplements to enhance erectile function as well as sexual arousal and desire, has drastically increased. This phenomenon, combined with the availability of these products over the Internet, represents a serious safety challenge from a clinical and a public health perspective.
Aim: The aim of this narrative review is to raise awareness on psychoactive properties and possible safety concerns of four such substances: yohimbine, maca, horny goat weed and ginkgo biloba.
Methods: A comprehensive multilingual assessment of 233 websites, drug fora and other online resources such as e-commerce, e-newsgroups, chat-rooms and videos between February and July 2013 using the Google search engine was complemented by additional searches using the Global Public Health Intelligence Network (GPHIN). The pharmacological and psychological side effect profiles were searched using PubMed, PsychoInfo and Scopus.
Main outcome measures: Identification of sexual enhancement products which are available over the Internet and contain substances with reported psychological side effects.
Results: The most common sexual enhancement products advertised and sold on the Internet were identified with their characteristics (i.e. brand names, costs, ingredients, availability, declared advantages and disadvantages). Their active ingredients included but were not limited to yohimbine, maca, horny goat weed and ginkgo biloba. These four substances were reported with the occurrence of adverse events and the induction of psychological symptoms, such as mood changes, anxiety and hallucinations as well as addictive behaviours.
Conclusions: Uncontrolled availability of sexual enhancement products that contain potentially harmful substances is a major public health concern. The possible impact on population health, particularly among subjects with psychiatric disorders, usually at risk for sexual dysfunction, may be significant. This new trend needs to be extensively studied and monitored in order to acquire essential knowledge and understanding at a global level.

**NR4-045**

**THERAPIST-DELIVERED COMPUTERIZED COGNITIVE BEHAVIORAL THERAPY FOR MAJOR DEPRESSION: A SYSTEMATIC REVIEW AND META-ANALYSIS**

*Lead Author: Yoshiyo Oguchi*
*Co-Author(s): Atsuo Nakagawa MD, PhD, Mitsuhiro Sado MD, Masaru Mimura MD, PhD*

**SUMMARY:**
Background: Depression is a major cause of disability worldwide. Great number of evidence shows that cognitive behavioral therapy (CBT) is effective for depression, but the number of therapist who can provide CBT is still limited. Computerized cognitive behavioral therapy (CCBT) may be useful in terms of treatment access which can be delivered to the patients with depression more widely. Although several studies have shown that stand-alone CCBT is associated with low adherence, CCBT in conjunction with therapist assistance (referred to as Therapist-delivered CCBT) may advance adherence. To our knowledge, there is no meta-analytic evaluation of therapist-delivered CCBT, so there is a need for a meta-analytic evaluation of the short-time efficacy of this therapy and for an evaluation of its long-term effects, functional improvement and dropouts.
Methods: MEDLINE, PsycINFO, Cochrane library and CINAHL were searched to September 2013. We included all RCTs comparing therapist-delivered CCBT to control with proper allocation and concealment strategies and to have at least well-defined outcome assessment in adults (aged 18 years and over) with major depression. The mean differences (MDs) and standard mean differences (SMDs) with 95%CIs were calculated for each outcome except for dropouts, for which relative risk ratios were calculated. Heterogeneity was assessed using an SMD forest plot and the I2 statistics. A random effects model was used. The main outcome measure (depression symptoms), function measures, and dropouts were included in the meta-analysis. Funnel plot analysis was performed to examine the publication bias.
Results: 8 RCTs met the inclusion criteria, including 954 patients. All RCTs used appropriate random sequence generation and Intention-to-Treat analyses, and employed BDI as the primary outcome. Waitlist was the most common control (4 RCTs; 50%). Therapist-delivered CCBT significantly reduced depression symptoms compared to control at post-treatment

(1.5 to 4 months) (8 comparisons; MD -8.05,95% CI -9.75 to -6.35). This effect was maintained at long-term (more than 6 months) follow-up (5 comparisons; MD -8.79, 95% CI -11.63 to -5.96). Therapist-delivered CCBT did not significantly improve post-treatment functionality compared to control (4 comparisons; SMD -0.13, 95% CI -0.64 to 0.38). Post-treatment drop-out rate between Therapist-delivered CCBT and control did not show significant difference (6 comparisons; RR 1.2, 95% CI 0.77 to 1.91). There was some evidence of publication bias based on visual inspections of the funnel plots with regard to the primary outcome.
Conclusion: Comparing to control conditions, therapist-delivered CCBT showed a reduction in depression symptoms at post-treatment and the effect maintained at long-term follow-up in adults with depression. However, therapist-delivered CCBT does not appear to improve functionality or reduce drop-out rates. Considering the risk of bias, further rigorous research is needed.

**NR4-046**

**ASSOCIATIONS BETWEEN AGE AND ATTITUDE TOWARD SUICIDE IN KOREA**

*Lead Author: Kyoung-Sae Na, M.D.*
*Co-Author(s): Seong-Jin Cho, M.D., Ph.D., Kang-Seob Oh, M.D., Ph.D., Dong Woo Lee, M.D., Ph.D., Se-Won Lim, M.D., Ph.D., Seung-Ho Ryu, M.D., Ph.D., Jun-Young Lee, M.D., Ph.D., Jong-Woo Paik, M.D., Ph.D., Jae Won Kim, M.D., Ph.D.*

**SUMMARY:**
Background: The suicide rate in Korea has been the highest among the Organization for Economic Co-operation and Development (OECD) countries for the last 9 years. In 2012, the suicide rate in Korea was 28.1 per 100,000. The suicide rate increases with age and the prevalence of suicide per 100,000 is 19.25, 26.94, 30.41, 35.52, 42.45, and 83.19 for Koreans in their 20s through 70s, respectively. We postulated that older age groups would have a more favorable attitude toward suicide than younger groups, which might contribute to the high suicide rates among the elderly.
Methods: We surveyed attitudes toward suicide using a nationally representative sample. Multi-stage stratified cluster sampling with probability proportionate to size was conducted at the first stage of sampling. Subsequently, three-way quota sampling according to age, gender, and region was also applied to ensure that the proportions of age, gender, and region of the sample represent the national population. The attitude toward suicide was measured using the Korean version of the Suicide Opinion Questionnaire (SOQ). The total score and those for the nine subscales (morality, religion, mental illness, aging, motivations, getting even, familial risks, acceptability, and attention-seeking) of the SOQ were compared according to sociodemographic and clinical variables. Multiple linear regression analysis was conducted to identify influences of age adjusted for other sociodemographic and clinical variables on the attitude toward suicide.
Results: In total, 1200 people responded to the survey. Older people had significantly less favorable attitudes toward suicide than younger people. Of the nine SOQ subscales, morality showed the most significant discrepancies according to age. People who had previously attempted suicide had more favorable attitudes toward suicide than people without a prior suicide attempt. In the multiple linear regression analysis, increasing age was the factor most strongly predicting an unfavorable attitude toward suicide.
Conclusions: Contrary to our a priori hypothesis, older people had more negative attitudes toward suicide than younger groups. This suggests that negative attitudes toward suicide in the general population might hinder people at high risk of suicide from seeking help, which consequently increases the suicide rate. Future studies should directly investigate the relationship between attitudes toward suicide and suicide rates.

**NR4-049**

**THE EFFECT OF SELF ESTEEM, SOCIAL SUPPORT AND DEPRESSIVE SYMPTOMS ON SUICIDAL IDEATION IN AN URBAN AREA OF KOREAN ELDERLY**

*Lead Author: Min Cheol Park, M.D., Ph.D.*
*Co-Author(s): Sang-Yeol Lee, M.D.,Ph.D. Wonkwang Univ Psych Hosp*

**SUMMARY:**
Objectives: The purpose of this study was to examine the relationship among self esteem, social support and suicide ideation as well as mediating effects of depressive symptoms.
Method: The data of this study was collected from over 65 year old subjects located in Iksan, Jeonbuk province. A multistage, cluster sampling design was adopted. 320 data sheets were collected, and among them, 300 were used in analyzing. All the subjects were evaluated for depression, suicidal ideation, self esteem, social support with Geriatric Depression Scale Short Form-Korean (GDSSF-K), Scale for Suicidal Ideation(SSI), Rosenberg Self-Esteem Scale, and Scale of Social Support(SSS). The data was analyzed by factor analysis, descriptive statistics, correlation and structural equation modeling.
Results: The major findings of this study were as following: First, suicidal ideation was negatively related to self-esteem($r=-.467$, $p<.01$), social support($r=-.355$, $p<.01$) but, positively related to depressive symptoms($r=.482$, $p<.01$). Second, self esteem and social support had direct effects on their suicidal ideation. Third, depressive symptoms mediated the process of developing suicidal ideation in the elderly.
Conclusion: These results showed that the social support and self esteem directly influenced suicidal ideation and depressive symptoms mediated self esteem, social support and suicidal ideation.
Keywords: Elderly, Suicidal ideation, Depressive symptoms, Self-esteem, Social support

**NR4-050**

**PERSONALITY TRAITS DEPEND ON MOOD STATE IN PATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Soyeon Park, M.D.*
*Co-Author(s): Saejeong Lee M.D., Woon Yoon M.D., Yeon Ho Joo M.D., Ph.D.*

**SUMMARY:**
This study aimed to determine whether personality traits differ across bipolar affective disorder (BD) patients with different mood states (euthymia, mania or depression) and how mood state is expressed as personality traits in patients with BD. A total of 102 BD patients were divided into three groups

according to the mood state at the time of testing: euthymic state (n = 48), manic episode (n = 21) and depressive episode (n = 33). The temperament and personality of patients was evaluated using the Temperament and Character Inventory and the HEXACO-Personality Inventory-Revised (HEXACO-PI-R) to evaluate. Depressive state was associated with increased harm avoidance and decreased self-directedness, and manic state was associated with increased persistence and cooperativeness. The presence of psychotic features was not related to personality. Scores on the extraversion and openness domains of the HEXACO-PI-R were higher than in patient in a manic state than in patients in a depressive state. In summary, there were clear effects of mood on self-reported personality. Harm avoidance, self-directedness, persistence, cooperativeness, extraversion, and openness domains of personality may be different depending on the current mood states in patients with BD. Extraversion best reflected the subsyndromal symptoms in euthymic state.

**NR4-051**

**SEX DIFFERENCES IN SUICIDE RATES AND SUICIDE METHODS AMONG ADOLESCENTS IN SOUTH KOREA, JAPAN, FINLAND, AND THE US**

*Lead Author: Subin Park, M.D.*

**SUMMARY:**

Objectives

Although suicide mortality is typically higher in males than in females, the sex ratio (male/female) differs greatly among countries. We compared sex differences in suicide rates and suicide methods in adolescents in South Korea, Japan, Finland, and the United States (US). We hypothesized that sex differences in suicide methods would be related to sex differences in the suicide rates in the adolescent populations of different countries.

Methods

We analyzed suicide rates and suicide methods of adolescents aged 15-19 years in four countries, using the World Health Organization mortality database.

Results

The suicide rates of males were higher than those of females in all countries. The sex ratio of suicide rates was 3.8 for the US, 3.6 for Finland, 1.9 for Japan, and 1.3 for South Korea.

Among male adolescents, jumping from high places was the most common suicide method in South Korea (45.0%), but it was a relatively uncommon in other countries. Firearms were the most common suicide method among male adolescents in the US (45.5%), and this was also a relatively common method among males in Finland (23.5%). However, this method was seldom used by Korean males, and it was not used at all by Japanese males. Jumping in front of moving objects was the most common suicide method among male adolescents in Finland (29.4%), but it was relatively uncommon in other countries.

Among female adolescents, the most common suicide method was jumping from high places in South Korea (61.1%), whereas it was hanging in the other three countries.

Among both male and female adolescents, the most common method of suicide was jumping from heights in South Korea and hanging in Japan. In Finland, jumping in front of moving objects and firearms were frequently used by males but not by females. In the US, males were more likely to use firearms, and females were more likely to use poison.

Discussion

The male-to-female suicide ratio was higher in the US and Finland, where sex differences in suicide methods were more prominent, than in Korea and Japan.

Among the lethal suicide methods, firearms were the most strongly associated with a high male:female ratio in the US and Finland. Jumping in front of moving objects is another lethal method associated with a high male:female suicide ratio in Finland. In South Korea and Japan, both male and female adolescents used similar lethal methods of suicide (i.e., jumping and hanging), leading to relatively higher suicide rates in female adolescents in these than in other countries.

Our findings suggest that sex differences in suicide methods contribute to differences in the suicide rates among males and female adolescents in different countries. Selective approaches targeting particular sex and national subgroups are needed when establishing policies to prevent suicide by restricting the methods that are available.

**NR4-052**

**NEUROPSYCHIATRIC SYMPTOMS AND INCREASED RISKS OF PROGRESSION FROM MILD COGNITIVE IMPAIRMENT TO DEMENTIA**

*Lead Author: Seung-Ho Ryu, M.D., Ph.D.*
*Co-Author(s): Hong Jun Jeon, M.D.*

**SUMMARY:**

Background and Objectives: Neuropsychiatric symptoms (NPS) are common in dementia and even in mild cognitive impairment (MCI) as well. NPS in MCI are associated with cognitive and functional decline and might be a predictor of progression to dementia. It is important that in terms of management and prevention to know their natural course and effects in MCI as well.

Methods: 306 community-dwelling Korean elderly with MCI from local dementia center were assessed for NPS using Neuropsychiatric Inventory (NPI). Subjects were assessed again after more than a year from baseline. 52 subjects (17%) were progressed to dementia. We compared baseline NPI scores between stable and deteriorated groups.

Results: Subjects progressing to dementia had a significantly higher prevalence of NPS (45.5 vs. 65.4%) than subjects who remained stable. Delusion (2.8 vs. 9.6%), agitation/anxiety (14.6 vs. 26.9%), depression (21.7 vs. 40.4%) and disinhibition (4.3 vs. 19.2%) were more common in deteriorated group. After adjustment for other variables, these specific symptoms were less evident for progression to dementia. On logistic regression analysis, only disinhibition at baseline was shown to be a risk factor for progression to dementia (OR= 0.26, 95% CI 0.09–0.78, P= 0.02).

Conclusion: These findings suggest that NPS in MCI may be a predictor of progression to dementia. Depression and apathy appear to be most useful for identifying MCI subjects at highest risk of developing dementia.

Keywords: Neuropsychiatric symptoms, Mild cognitive impairment, dementia

**NR4-053**

**POSSIBLE CULTURAL EFFECTS ON THE INCREMENTS OF SOMATIC SYMPTOMS IN SUBJECTIVELY RESILIENT DEPRESSED**

**KOREAN PATIENTS**

*Lead Author: Yoo Hyun Um, M.D.*
*Co-Author(s): Jeong-Ho Chae, M.D., Ph.D., Sun-Young Kim, B.A., Hyu-Jung Huh, M.D.*

**SUMMARY:**
Objective: While previous literatures have provided substantial evidence on the burden of somatic symptoms and the prognostic value of resilience in the treatment course of depression, little is speculated on the relationship between resilience and somatic symptoms in depressed patients. We aimed to clarify the relationship between resilience and somatic symptoms in depressed patients retrospectively.
Methods: Two hundred and fifty four outpatients with depressive disorders participated in the study and completed self-administered questionnaires regarding demographic, clinical and psychological factors. We divided the patients into four group based on their scores of Connor-Davidson Resilience Scale (CD-RISC) and Beck Depression Inventory (BDI). The partial correlation analysis was implemented to show the relationship between somatic symptoms and resilience after controlling for depression, and one-way ANOVA was conducted to demonstrate the differences in somatization scores of Symptoms Checklist-90-Revised in the aforementioned four groups.
Results: After the correlation analysis, somatization was significantly correlated with resilience even after controlling for depressive symptoms. The one-way ANOVA and post-hoc analysis revealed a statistically significant differences in somatization scores between the four groups, with the high BDI, high CD-RISC group having the highest somatization scores.
Conclusion: Striving to be resilient during the peak of depression, cultural factors and positive illusions of depressed patients can result in high resilience scores and high somatization scores in depressed patients, and such clinical implications would help clinicians evaluate resilience and somatization in depressed patients from multidimensional aspects.

**NR4-054**

**PSYCHOSOCIAL FACTORS ASSOCIATED WITH QUALITY OF LIFE IN THE COMMUNITY-DWELLING ELDERLY LIVING ALONE**

*Lead Author: Sung Won Yoo, M.D.*
*Co-Author(s): Sang Joon Son, M.D., Ph.D., Hyun Soo Kim, M.D.*

**SUMMARY:**
Introduction
This study is to examine the association between quality of life in older adults living alone and psychosocial factors.
Subjects and method
The subjects were 329 community-dwelling elderly people who lived alone at the age of 65 and more. We assessed sociodemographic characteristics including economic status. Social support was evaluated by the frequency of contact with offsprinngs and utilization of community care services. Psychological evaluation includes attachment, loneliness, depression, subjective health status and quality of life. All factors were evaluated by standardized scales.
Results
Pearson's correlation analyses exhibited elderly loneliness($r=-0.211$, $p<0.01$), depressive symptom($r=-0.499$, $p<0.01$) and subjective economical status($r=-0.112$, $p<0.05$) had negative correlations with quality of life score. In addition, Multiple regression analyses revealed the associaiton with quality of life and depressive symptoms ($B=-0.64$, $p<0.001$).
Conclusion
Quality of life in the elderly living alone may be related with depressive symptoms.

**NR4-055**

**PSYCHOSOCIAL FACTORS INFLUENCING SUICIDAL ATTEMPTS OR SUICIDAL IDEATION IN ADOLESCENTS**

*Lead Author: Bo-Hyun Yoon, M.D., Ph.D.*
*Co-Author(s): Kyung-Min Kim, M.D., Young-Hoon Han, M.D., Je-Heon Song, M.D., Young-Hwa Sea, M.D., Soo-Hee Park, M.D., Kwang-Hun Lee, M.D., Ph.D.*

**SUMMARY:**
Objectives: Adolescent suicide rapidly increases after 15, and it is most common cause of death in that ages. The aim of this study was to examine the psychosocial factors influencing suicidal attempts or suicidal ideation in adolescents.
Method: From August 2012 to October 2012, a total of 4421 school adolescents (male 2,256, female 2,165) in 3 cities of Jeollanam-do (Goheung-gun, Yeosu-si and Jangheung-gun) were involved. Suicidal attempt group or Suicidal ideation group were recorded if a respondent answered 'yes' to a question about experience of suicidal attempt or thought. We checked sociodemographic factors using self-reporting questionnaire. And so as to assess the psychosocial factors, the students were asked to complete the Beck Suicidal Ideation Inventory, Beck Depression Inventory, Global Assessment of Recent Stress, Dysfunctional Impulsivity Scale, Self-Esteem Scale and Resilience Test.
,Result: Of the overall sample of 4421 students, 220(5%) reported suicidal attempt and 1193(27%) reported suicidal ideation. Significantly more girls than boys reported both suicidal attempt and suicidal ideation. Age difference was significant. That is, middle school students was more reported only suicidal attempts than high school students. BDI, BSII, GARS, RIS, SES score was significantly higher in the suicidal attempt group than suicidal ideation group, and the score of the suicidal ideation group was higher than that of the control group. Multivariate multinomial logistic regression analysis revealed that gender, family satisfaction, depression, stress and self-esteem were significantly associated with both suicidal attempt and ideation. And grade, socioeconomic status and impulsivity were significantly correlation with suicidal attempt. Middle-school student, high socioeconomic status and depression were reported a risk factor of suicidal attempt in the suicidal ideation group.
Conclusion: As a lot of adolescents think about suicide, to understand characteristic of suicide high risk adolescent and manage them appropriately are very important. We found some factors associated with adolescent suicide. Depression is strongest predictor for suicide. Gender, grade, socioeconomic status and family satisfaction were also correlated of suicide. In addition, self-esteem and resilience reported as protective factor of suicide. This study suggests that an intensive and multidimensional approach in the area of school education and adolescent suicide prevention program is necessary for the intervention with varied factors influencing suicidal ideation and attempts.

**NR4-056**

**GLUTAMATE COMPLEX AND BDNF CONCENTRATION OF DEPRESSIVE PATIENTS WITH COGNITIVE DYSFUNCTION**

*Lead Author: Seoyoung Yoon, M.D.*
*Co-Author(s): Changsu Han, M.D., Ph.D., Jonghun Kim, M.D., Ho-Kyoung Yoon, M.D., Ph.D.*

**SUMMARY:**
Background: Major depressive disorder is known to affect patients' neurocognitive function, producing symptoms such as pseudodementia, but some of them shows persistent cognitive impairment even after recovery from depression. Depression is also highly prevalent in mild cognitive impairment (MCI), and is a possible risk factor of dementia. Suggested hypotheses about the relationship between depression and cognitive impairment are that either depression being a risk factor or early symptom of dementia, or depression and cognitive impairment having common neuropathologic processes, but they are still not fully understood. Glutamate is the major excitatory neurotransmitter in the central nervous system, and studies suggest that it attributes to the neurobiology and treatment of depression, including cognitive impairment. Decreased brain-derived neurotrophic factor(BDNF) levels have been reported in Alzheimer's disease and regarded as a contributor to neurodegenerative change and cognitive impairment. Changes of BDNF levels in depressive patients also have been reported. So we aimed to find differences in biological markers like Glutamate and BDNF in MCI patient with and without depression, which may promote our understanding in the relationship between depression and cognitive impairment.
Methods: 163 patients diagnosed as MCI by subjective complaints and neurocognitive tests were divided into a depression group and a non-depression group. Serum BDNF levels were tested by blood sampling, and the level of glutamate in the anterior cingulate gyrus was tested by Magnetic resonance spectroscopy. A Students' T-test was performed to compare level of BDNF and glutamate between the depression group and the non-depression group.
Results: There were no significant differences in serum BDNF levels between depression and non-depression groups. Glutamate levels in the anterior cingulate gyrus were significantly lower in the depression group than in the non-depression group.
Conclusions: A decrease in glutamate levels was specific to depression in MCI patients. It suggest that depression may contribute to cognitive impairment and its progression independently, rather than just share same risk factor or being an early symptom of dementia, and that glutamate may play a role in cognitive decline. Future studies should confirm whether MCI with depression shows a higher conversion rate to dementia than MCI without depression, and longitudinally follow glutamate level and cognitive function under the treatment of depression.

**NR4-057**

**A STUDY ON QUANTITATIVE EEG ANALYSIS BETWEEN COOPERATIVE LEARNING AND LECTURE-BASED LEARNING IN THE COMPANY**

*Lead Author: Tak Youn, M.D., Ph.D.*
*Co-Author(s): Hyong Sook Jun, MA*

**SUMMARY:**
The purpose of this study is to investigate the teaching method to respect the learning instinct of human being as a homo eruditio in HRD(human resource development). To investigate the effective teaching method, QEEG(Quantitative electroencephalography) was measured for 12 new employees in a company, while they were in both cooperative learning and lecture-based learning, and it was interpreted as a view of Science of Erudition.
In this study, three issues were raiesd. First, what is the participants'QEEG difference while they were in cooperative learning and lecture-based learning? Second, what is the meaning of QEEG difference above, if it is interpreted as a view of Science of Erudition? Third, What is the more effective teaching method in HRD to pursue the Erudition for human being? To investigate above questions, QEEG examination was performed under the international 10-20 system to twelve new employees. The result shows that the alpha absolute powers differ from cooperative learning and lecture-based learning in Pz electrode. Beta relative powers between in cooperative learning and lecture-based learning differ in Fp1, C4, Cz and O1 electrodes. Interhemispheric asymmetry of beta absolute power was observed in Fp1-Fp2 electrodes and delta absolute power was also observed in T5-T6 and O1-O2 electrodes. An increased activity of beta relative power during cooperative learning could be understood that participants'cognitive functions are more activated than during lecture-based learning. Moreover, concentration and arousal function are also increased while participants are in cooperative learning rather than in lecture-based learning.
In addition, regarding the view of Science of Erudition, results of this study shows that cooperative learning method is more effective way for human to fulfill learning instinct than lecture-based learning method. Since, the essential ingredients of Science of Erudtion, such as eye contacts, gestures, conversation, discussion and sympathy etc..., are major factors of learning in cooperative learning. So the participants interact with each other and with the facilitator. While those process of this interaction, participants become more proactive, concentrated, and aroused. Regarding this, ToM(Theory of Mind) is critically important to understand the Erudition. ToM is the ability to comprehend not only myself but also the surrounded peripherals' situation, intention, and emotion etc. When executing the project related with ToM, frontal, parietal and temporal lobe are activated in previous study, which are the exactly same area when the participants were in cooperative learning in this study.
At last, cooperative learning method would better to be encouraged to fulfill the learning instincts of human beings in HRD. Through the cooperative learning, people would feel and be touched, because they are respected within the interactive and communicative learning.

**NR4-058**

**THE PREFERENCE SURVEY FOR LONG-ACTING INJECTABLE ANTIPSYCHOTICS OF COMMUNITY-DWELLING PATIENTS WITH SCHIZOPHRENIA AND THEIR CAREGIVERS**

*Lead Author: Tak Youn, M.D., Ph.D.*
*Co-Author(s): Yoong Lee, M.D., Nam-Young Lee, M.D., Ph.D., Tak Youn, M.D., Ph.D., Yong-Seoung Choi, M.D., Ph.D., Yong-Sik Kim, M.D., Ph.D. In-Won Chung, M.D., Ph.D.*

**SUMMARY:**
Objective : The prescription rates of long-acting injectable (LAI) antipsychotics are very low around 1% in Korea. This study was aimed to explore the preference of LAIs in patients with schizophrenia, who are currently living in community, and their caregivers.
Methods : The patients, diagnosed with schizophrenia by DSM-IV TR and were registered in the 31 mental health centers of Gyeonggi province and their caregivers were inquired the knowledge of the LAIs. The questionnaires contained information such as demographic characteristics, history of psychiatric treatment, and so on.
Results : About 5,318 were registered in 31 community mental health centers of Gyeonggi province in February 2012. The questionnaires of 614 patients and 365 caregivers were gathered from 20 community mental health centers. The mean ages (±SD) of patients and caregivers were 41.9 (±10.2) and 62.2 (±13.4) years old, respectively. 272 patients (44.6%) had experienced the discontinuation of medications without doctor's consent. 217 patients (35.9%) and 97 caregivers (27.1%) knew about the LAIs. The preference rates for LAIs were 35.2% and 46.8% for the patients and caregivers, respectively.
Conclusion : There is still huge discrepancy between the preference and the real prescriptions of LAIs in community-dwelling patients and their caregivers, much higher than in those of hospital settings. This study suggests that both patients and caregivers registered in the community mental health centers have a strong commitment to live in the community. The obstacles against the benefits of LAIs need to be resolved.

**NR4-060**

**ASSOCIATION BETWEEN BDNF VAL66MET POLYMORPHISM AND FEMALE SEXUAL DYSFUNCTION IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER ON SSRIS**

*Lead Author: Nor Z. Zainal, M.D.*
*Co-Author(s): Nur E. Nazree, B.Sc., Hatta Sidi, M.D., Gavin P. Reynolds, Ph.D., Zahurin Mohamed, Ph.D.*

**SUMMARY:**
Background: Evidences show that Brain Derived Neurotrophic Factor (BDNF) is a member of the nerve growth which plays important role in serotonergic pathway, and therefore it is a potential candidate gene that might be involved in the underlying mechanism of Major Depressive Disorder (MDD) and antidepressant treatment outcome, particularly in Selective Serotonin Reuptake Inhibitor (SSRI). Thus, it is hypothesized that BDNF gene polymorphism may be implicated in the mechanism of female sexual dysfunction (SD) following Selective Serotonin Reuptake Inhibitor treatment. Methods: Buccal swabs were collected from ninety five female patients with Major Depressive Disorder (MDD). Each patient was specifically assessed on the sexual function using Malay Version Female Sexual Function and marital satisfaction using Golombok-Rust Inventory for Marital State (GRIMS). Genotyping was done using Real Time Polymerase Chain Reaction (PCR). Results: There is a significant association between BDNF Val66Met polymorphism with worse sexual function in the orgasm domain (p=0.043) in female patients following SSRI treatment. Analysis using the dominant model also demonstrated significant association between the BDNF polymorphism and lubrication and orgasmic disorder (p=0.016, p=0.017). A trend toward significant association between the BDNF polymorphism with sexual function was seen in the dominant model, although it did not quite reach statistical significance after adjustment for GRIMS score (p=0.052). Conclusions: Therefore our findings suggest the possible involvement of BDNF Val66Met polymorphism in the risk of developing female sexual dysfunction following SSRI treatment, particularly in the lubrication and the orgasm domains.

**NR4-061**

**LIFE TIME CO-OCCURRING DISORDERS IN MUTUAL-AID RESIDENTIAL TREATMENT CENTERS IN MEXICO: A CROSS SECTIONAL STUDY**

*Lead Author: Rodrigo Marin-Navarrete, Ph.D.*
*Co-Author(s): (1) Corina Benjet, (1) Angélica Eliosa-Hernández, (1) Guilherme Borges, (1) Luis Villalobos-Gallegos, (1) Maria-Elena Medina-Mora*

**SUMMARY:**
Introduction:
A current problem on the field of addictions is the co-occurrence between Substance Use Disorders (SUD) and Other Psychiatric Disorders (OPD); epidemiological research has found that SUD prevalence among psychiatric clinical populations is higher than in general population. People with Co-occurring disorders show a higher severity in both diagnostics, are more likely to sustain a medical, social and legal condition than other kind of patients, such as higher risk for suicide behavior, infection disease, relapse, hospitalization, homeless, to named a few. According to the most recent National Addiction Survey in Mexico, it is estimated that prevalence of alcohol and drug dependence has increased in the last 10 years, and exist more people that required medical and psychological assistance. On the other hand, the task force addiction treatment in Mexico is integrated by: Almost 450 public outpatient centers, other public and private specialized efforts, and Mutual Aid initiatives, with more than 15,000 AA traditional groups (1.5 hours) and more than 2000 Residential Addictions Centers called "ANEXOS" or "CRAMAAs", This study is part of an initiative to characterize the population who are receiving care in these facilities. It is estimated that approximately 200,000 people are receiving care by "non professionals" in these adapted facilities, and a big number of them don't receive a basic medical care, in addition to living in overcrowded conditions and neglect of all kinds.
Aims:
To estimate the lifetime prevalence comorbidity between substance use disorders (SUD) and other psychiatric disorders (OPD) in a sample of males who received attention in Mutual-Aid residential addiction centers in Mexico.
To identify risk of development of SUD on a population with a previous onset of OPD.
Methods:
346 participants were assessed (between 18-65 years old), in three mutual aid residential addiction centers in Mexico City. Composite International Diagnostic Interview was administered; Odds Ratio and Cox regression were obtained, considering psychiatric and substance use disorders, and age of onset for each disorder.
Results:
The lifetime analysis shown that, 83% of participants had a psychiatric disorder before substance use disorder onset; obtained

risk for development of an alcohol use disorders was not statistically significant (OR=0.805 IC 95% 0.369-1.755), however, hazard for develop a drug use disorder increased significantly (OR=4.2 IC 95% 2.507-7.157) compared with those that did not endorse a previous psychiatric disorder; also, it was observed that Attention Deficit and Hyperactivity Disorder had a higher risk to develop a drug use disorder (OR=4.6 IC 95% 2.77-7.67).
Discussion:
Psychiatric disorders increase risk for development of substance use disorders, showing the importance of early detection and integrated-multidisciplinary treatment to prevent related consequences.

**NR4-062**

**A MULTISITE RANDOMIZED CONTROLLED TRIAL OF MOTIVATIONAL ENHANCEMENT TREATMENT IN OUTPATIENT ADDICTION CARE CENTERS IN MEXICO**

*Lead Author: Rodrigo Marin-Navarrete, Ph.D.*
*Co-Author(s): (2) Viviana E. Horigian M.D., (1) José Fernández-Mondragón B.Sc., (2) Rosa E. Verdeja M.Ed., (2) Elizabeth Alonso Ph.D., (1) Liliana Templos-Nuñez M.S., (1) Angélica Eliosa-Hernández M.S., (2) Daniel Feaster Ph.D., (3) Ricardo Sánchez-Huesca Ph.D., (1) Ana De la Fuente-Martín M.D., (4) Carlos Lima-Rodríguez M.D., (1) Carlos Berlanga-Cisneros M.D., (1) María Elena Medina-Mora Ph.D.*

**SUMMARY:**
Introduction: In Mexico, harmful substance use is a major public health issue considered one of the main contributors to the national burden of disease. In the last decade there has been an increase in the number of people in need of treatment, of which only a small percentage finishes treatment. There is also a lack of research that follows standards of clinical trials to validate evidence-based practices in real-world clinical settings in the country. Motivational Enhancement Treatment (MET) is a brief-structured client-centered behavioral intervention that has shown to help improve treatment outcomes through clinical trials in different populations but not in Mexico. We hypothesized that with the Mexican population of addiction treatment-seekers: 1) MET would be more effective than Counseling as Usual (CAU) in reducing substance use during treatment; and 2) MET would be more effective than CAU in retaining clients in treatment.
Method: Multi-site, two-arm, randomized controlled clinical trial. Outcome assessments were conducted at baseline, during and at the end of treatment phase, and at 1 and 2-month follow-ups. We randomized 120 adult treatment seekers for any type of substance use from 3 outpatient addiction care centers in Mexico City and the city of Puebla. Intervention effect was assessed under an “intention to treat” approach. For analysis, a negative binomial specification model and an autoregressive correlation structure fitted better after examination of fit statistics and estimated scale parameters. Cohen’s d was calculated to provide an estimated of effect size for therapy condition across and within each site for the outcome variables.
Results: 90% of the sample completed all treatment sessions. Both MET and CAU resulted in reductions in substance use and increase in treatment retention. Significant differences were only found in reduction of days of substance use over time by treatment condition. No significant differences were found between treatments across site or by primary substance of abuse.
Discussion: Results from this study show that MET, compared with CAU, has a moderate effect on treatment outcomes and is a promissory intervention when considering it may have more lasting effects on drug use. A different approach has to be considered to enhance treatment retention in Mexican patients. Overall this experience proves that clinical trials for the validation of evidence-based practices in real-world settings are a viable strategy for the development of resources to counteract the drug problem in Mexico.

**NR4-063**

**RISK DETECTION AND INHIBITORY CONTROL IN ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER**

*Lead Author: Eliana Medrano, M.Psy.*
*Co-Author(s): Julio C. Flores Lázaro, Humberto Nicolini Sánchez*

**SUMMARY:**
Introduction: Recent focus on Attention Deficit-hyperactivity Disorder (ADHD) have been placed in adolescence as one of the most important stages for his disorder. At this age the influence of behavioral difficulties and comorbidity reaches the highest severity and effect. To date there are few studies on the development of executive function in adolescents with ADHD, and even less studies on sensitivity to risk-choice. Deficits in executive functions remain in subjects with ADHD from infancy to adolescence and continue through youth ages with significant academic and behavioral consequences.
Objective: to determine the performance in risk- detection, risk-reward processing, and inhibitory control tests, in adolescents with ADHD.
Methods: 35 adolescents (age-average: 13.49) diagnosed with ADHD (DSM-IV criteria), with normal level of intelligence, were studied by Iowa-type developmental-variant test, and Stroop test. All patients were free of medication at the time of the evaluation. Results were compared with a control 24 adolescents group with no clinical history (neurological or psychiatric) paired by age and years of education. Two types of comparisons were made, the first took place between ADHD groups (n = 35) versus control group without ADHD (n = 24), each measurement was analyzed using t test. On the second comparison, the group of subjects with ADHD was divided in: inattentive subtype (n = 15), and combined subtype (n = 20); and then compared with the control group. ANOVA was conducted (with Bonferroni adjustment)
Results: Overall results show that adolescents with ADHD have lower performance than normal adolescents, which implies that three of the main mechanisms leading to the control and regulation of behavior presented deficient performances. ADHD adolescents have lower ability to detect risk selections (they choose more risk cards [F= 9.589, p= 0.000]); and a lower risk benefit processing capability (combine gains and losses to obtain the highest profit [F= 6.350, p=0.004]); they also present less inhibitory control (more impulsivity errors and more time to perform the task [F= 7.008, p=0.012, F= 10.188, p=0.027]). In regard to ADHD subtypes it was found less efficiency speed at inhibitory control (Stroop paradigm F= 10.188, p=0.027) for the inattentive group, and a reduced efficiency in the risk-benefit paradigm at the combined group (F= 12.895, p= 0.000).
Conclusions: Results indicate that adolescents with ADHD present a high neuropsychologic risk condition and emphasis should

be place in executive functions development on adolescents-ADHD, to prevent risk-choices and impulsive behavior. Intervention programs may be also specific to each subgroup profiles.
References:
Geurts, H. M., Van der Oord, S., & Crone, E. A. (2006). Hot and cool aspects of cognitive control in children with ADHD: decision-making and inhibition. Journal of abnormal child psychology, 34(6), 813–24.

**NR4-064**

**SELF-EFFICACY, PSYCHOSOCIAL FUNCTIONING AND SCHIZOPHRENIA SYMPTOMS TO DESIGN A RECOVERY-ORIENTED COGNITIVE-BEHAVIORAL THERAPY**

*Lead Author: Tania Morales-Vigil, M.Psy.*
*Co-Author(s): Rebeca Robles-García. PH.D., Ana Fresán-Orellana. PH.D., Mariana Domínguez-Correa, Ricardo A. Saracco-Alvarez. M.D., Raul I. Escamilla. M.D.*

**SUMMARY:**
Negative symptoms tend to persist, are less responsive to treatment with neuroleptics and are directly related to the recovery in patients diagnosed with schizophrenia. The diathesis-stress model shows that the symptoms of schizophrenia are not simply due to underlying biological deficits but also to the lack of cognitive and behavioral strategies. Different studies confirm this claim by concluding that pharmacological treatment combined with psychosocial interventions is the treatment modality that proved most useful for this condition.
Within the psychotherapeutic approaches aimed at patients with schizophrenia cognitive-behavioral therapy has proved to be more effective. There are numerous studies evaluating the effectiveness of cognitive-behavioral therapy in patients with refractory schizophrenia finding relevant results in terms of reducing the severity of delusions, hallucinations and improved social functioning , and although there are studies that have revealed favorable results in terms of negative symptoms, there are very few studies evaluating the effectiveness of specific cognitive-behavioral treatment for negative symptoms affecting psychosocial functioning , and thereby your chances of recovery and community reintegration. So, despite the advances made both in drug treatments and cognitive- behavioral interventions, the problems generated by negative symptoms of patients with schizophrenia are still far from being solved. Although CBT has shown a medium effect size in the treatment of positive symptoms, patients with predominantly negative symptoms and functional deterioration have been disregarded as such patients generally show cognitive deficits. In the absence of viable and effective treatments for negative symptoms of schizophrenia it is relevant to test new models in order to accommodate the psychosocial interventions aimed to patients with predominant negative symptoms and functional deterioration. In a recent study, the Recovery-Oriented Cognitive-Behavioral Therapy (CBT) showed effectiveness in patients with low psychosocial functioning and predominant negative symptoms. The purpose of this research was to know the relationship between the variables: Self efficacy, Anxiety and Depression, cognitive Symptoms, negative Symptoms, positive Symptoms and psychosocial Functioning in order to design a program of cognitive-behavioral intervention aimed to encourage recovery of patients with predominant negative symptoms. The evaluation of above variables was performed using the General Self-Efficacy Scales, PANSS and GAF 5 Factors in a sample of 100 patients with paranoid schizophrenia using Pearson Correlation and Multiple Regression. From the statistical analysis a cognitive behavioral treatment program consisting of 12 sessions that included strategies for reducing negative symptoms, providing tools to face unexpected situations and increasing self-efficacy was performed.

**NR4-065**

**FAILURES IN THE FACIAL EMOTION RECOGNITION IN PATIENTS WITH SCHIZOPHRENIA, SIBLINGS, AND CONTROL SUBJECTS**

*Lead Author: Ricardo A. Saracco-Alvarez, M.D.*
*Co-Author(s): Ana Fresán, Ph.D., Raúl I. Escamilla, M.D.*

**SUMMARY:**
Introduction: Facial recognition is the ability to recognize basic forms of emotional expression on the faces of other individuals (Hall, 2004; Russell, 1994). The basic affective expressions are: happiness, sadness, fear, disgust, surprise, anger, and neutral face (Ekman, 1994). Poor facial recognition is more frequent when recognizing negative emotions, included schizophrenic patients (Gard, 2011).
Methods: Our objective was to determinate which emotions were confused and for which were mistaken. It was an observational trail with three groups: 34 schizophrenic patients, 34 siblings, and 34 control subjects. We used SCID-I and SCL-90 scale for siblings and controls. PANSS, CDSS, and CGI in schizophrenic patients, and we used the pictures of facial affect developed by Ekman (1976).
Results: In all groups, the least recognized emotion was fear and the most recognized was surprise within the patient and the sibling groups. The control group acknowledged more the neutral emotion face.
Happiness was mistaken for the neutral face in 13% by patients, 8% by siblings and 7.7% by control. The patient's mistaken sadness for fear in 15.6%, for neutral face in 10.9%, and for anger in 6.1%. The siblings had mistaken it for fear in 14.1%, and for anger in 7.9%. The control group had mistaken it for fear in 11.2%, and for anger in 4.5%. Fear was the least recognized; the patients group mistaken it for surprise in 42.6% and anger in 6.9 %. The sibling's mistaken it for surprise in 41.3 %, and control group also for surprise in 25.4% ($F=8.18$, 2gl, $p=0.001$). Anger was mistaken by patients for neutral face in 5.6%, fear in 5.2%, surprise in 5.04 %, and disgust in 4.9 %. Sibling's mistaken it for disgust in 4.7%, and control group for surprise in 2.6% Surprise was the most recognized emotion in three groups and the confusion was lesser in the three groups. Disgust was mistaken for anger by patients in 25.6%, siblings in 23.3%, and control subjects in 11.5% ($F=12.17$, 2gl, $p<0.001$). Neutral face was highly recognized by control group and siblings group, the patient's group mistaken the neutral face for sadness in 4.6%.
Discussion: The differences in the recognition of emotions on previous studies reported a poor recognition of fear and sadness. In our study, we found that differences persisted, and the fear expression was mistaken for surprise in all groups. The patient group showed differences in relation to other groups, but the siblings group was closer to patients. The control group had a lesser degree of failure in recognition emotion. This supports the presence of basic cognitive failures in patients and their siblings (Kohler, 2010).

**NR4-066**

**THE EFFECTS OF INTEGRATING PHARMACOLOGICAL AND PSYCHOSOCIAL TREATMENT ON SYMPTOMATIC REMISSION AND FUNCTIONAL OUTCOME IN SCHIZOPHRENIA PATIENTS**

*Lead Author: Marcelo Valencia, Ph.D.*
*Co-Author(s): Ana Fresan, Ph.D., Francisco Juarez, Ph.D., Raul Escamilla, M.D., Ricardo Saracco, M.D.*

**SUMMARY:**
Aim of this study: to test the effects of a social skills training approach on remission and functional outcome in patients with schizophrenia in a 6-month follow-up. The main hypotheses of the present study were: a) a greater proportion of patients receiving customary antipsychotic treatment in conjunction with social skills training will meet remission criteria and would show a higher functional improvement when compared to those receiving antipsychotic treatment alone; b) a higher proportion of patients who fulfilled both, the criteria for symptomatic remission and functional improvement, will belong to the group receiving the social skills training approach.
Objective: The effects of pharmacological and psychosocial treatment on remission and the functional outcome in outpatients with schizophrenia were evaluated. Remission was assessed according to the criteria proposed by the Remission in Schizophrenia Working group and psychosocial functioning according to the Global Assessment of Functioning with a score >60. Functional outcome was the result of these two variables.
Method: One hundred fifty two patients were randomized to receive either, antipsychotic treatment as usual (TAU) or social skills training and family psychoeducation in addition to TAU. A final sample of 119 patients: n=68 in the social skills training group, and n=51 in the TAU group completed the study protocol. Patients were assessed at baseline and at 6-month follow-up.
Results: At the end of the study, 80% of the patients fulfilled the criteria for symptomatic remission: 62 patients (91.2%) in the social skills training group in contrast to 34 patients (66.7%) in the TAU group. Functional improvement criteria were accomplished by 41 patients (34.5%) at the end point of the study. Forty of these patients (58.8%) belonged to social skills training and one patient to customary treatment ($\chi 2=41.7$, df 1, $p<0.001$) and when criteria for symptomatic remission and functional improvement were combined, 39 patients (97.5%) of the social skills training group and one patient (1.9%) of the customary treatment group achieved functional outcome.
Conclusions: The results emphasize the need for psychosocial interventions as conjoint to pharmacological treatment to improve functional outcome in schizophrenia patients.

**NR4-067**

**REPLICATED EVIDENCE OF ABSENCE OF ASSOCIATION BETWEEN SERUM S100B AND (RISK OF) PSYCHOTIC DISORDER**

*Lead Author: Christine van der Leeuw, M.D.*
*Co-Author(s): Machteld Marcelis, M.D., Ph.D., Sanne Peeters, MSc, Marcel Verbeek, Ph.D., Paul Menheere, Ph.D., Lieuwe de Haan, M.D., Ph.D., Jim van Os, M.D., Ph.D., Nico van Beveren, M.D., Ph.D., for G.R.O.U.P.*

**SUMMARY:**
Introduction: S100B is a potential marker of neurological and psychiatric illness. In schizophrenia, increased S100B levels, as well as associations with acute positive and persisting negative symptoms, have been reported. It remains unclear whether S100B elevation, which possibly reflects glial dysfunction, is the consequence of disease or compensatory processes, or whether it is an indicator of familial risk.
Methods: Serum samples were acquired from two large independent family samples (n=348 and n=254) in the Netherlands comprising patients with psychotic disorder (n=140 and n=82), non-psychotic siblings of patients with psychotic disorder (n=125 and n=94) and controls (n=83 and n=78). S100B was analyzed with a Liaison automated chemiluminescence system. Associations between familial risk of psychotic disorder and S100B were examined.
Results: Results showed that S100B levels in patients (P) and siblings (S) were not significantly different from controls (C) (dataset 1: P vs. C: B=0.004, 95% CI -0.005 to 0.013, p=0.351; S vs. C: B=0.000, 95% CI -0.009 to 0.008, p=0.926; and dataset 2: P vs. C: B=0.008, 95% CI -0.011 to 0.028, p=0.410; S vs. C: B=0.002, 95% CI -0.016 to 0.021, p=0.797). In patients, negative symptoms were positively associated with S100B (B=0.001, 95% CI 0.000 to 0.002, p=0.005) in one of the datasets, however with failure of replication in the other. There was no significant association between S100B and positive symptoms or present use or type of antipsychotic medication.
Conclusions: S100B is neither an intermediate phenotype, nor a trait marker for psychotic illness.

**NR4-068**

**THE INCIDENCE OF NONSUICIDAL SELF- INJURY AND SUICIDAL BEHAVIOR DISORDER IN ADOLESCENT GIRLS DIAGNOSED WITH CONDUCT DISORDERS.**

*Lead Author: Monika Szewczuk-Bogusławska MD, Ph.D.*
*Co-Author(s): Małgorzata Kaczmarek, M. Psych. Sc. , Maja Krefft, M.D., Natalia Zazulak, M.D.*

**SUMMARY:**
Introducion: Nonsuicidal Self- Injury (NSSI) is a common phenomenon in adolescent period with higher incidence in girls. It was suggested that 12-35% of adolescents engaged in NSSI, before diagnostic criteria have been introduced in DSM V. Previous studies revealed that around 9 % of adolescents admitted to attempting suicide. The aim of the study was to assess the incidence of NSSI and SBD according to DSM V criteria in adolescent girls diagnosed with Conduct Disorder (CD).
Methods: 82 girls aged 13-18 years (mean 15.7) diagnosed with CD were included into the study. All participants were residents of Youth Sociotherapy Center (YSC), where they were educated and treated due to previous educational and behavioral problems and/or juvenile delinquency. Based on psychiatric and psychological examination, medical and psychiatric history, the incidence of NSSI and SBD were estimated.
Results: 60 girls (73.2%) confirmed engagement in self- injurious behaviors in their lifetime, however 29 participants (35.6%) engage in NSSI on at least 5 days in the last year. All girls who engaged in self- inflicted damage fulfilled remaining diagnostic criteria. Suicidal attempts which occurred during past 2 years and fulfilled criteria of SBD were reported by 28 (34.1%) participants.
Conclusion: According to DSM V criteria more than a third of adolescent girls diagnosed with CD fulfills criteria of both Nonsuicidal Self-Injury and Suicidal Behavior Disorder.

**NR4-069**

**THE PREVALENCE OF PSYCHIATRIC DISORDERS IN THE POLISH SAMPLE OF CHILDREN AND ADOLESCENTS WITH PERINATAL HIV INFECTION: A CASE SERIES**

*Lead Author: Anna Zielinska, M.D.*
*Co-Author(s): F. Pierowski, M.A. (1), U. Coupland, M.D. (1), M. Bielecki, Ph.D. (2), T. Srebnicki, Ph.D. (3), M. Marczynska, M.D., Ph.D. (1), T.Wolanczyk M.D., Ph.D. (3).*

**SUMMARY:**
Introduction.
The main focus of research on consequences of HIV infection is on adult population with a deficiency of research on children, especially with perinatally acquired HIV. No such studies have been done in Poland so far. By the end of 2012 - 118 children were subject to antiretroviral therapy in Poland.
The etiology of psychiatric disorders in children with vertically acquired HIV is assumed to be related to both HIV neurotoxicity and environmental factors. The presence of comorbid psychiatric disorders has serious consequences including worse compliance and engagement in risk behaviors which may lead to the expansion of HIV.
The goal of this study was to assess the prevalence of psychiatric disorders in children and adolescents with perinatal HIV infection together with their social and treatment profile.
Methods.
The study was carried out in the Department of Children's Infectious Diseases, Medical University of Warsaw. Vertically HIV infected children aged 6-18 years old were qualified for the study. All subjects (a child and/or a caregiver) were interviewed using K-SADS-PL (Kiddie Schedule for Schizophrenia and Affective Disorders Present and Lifetime versions) for the presence of psychiatric disorders (current or past) and were asked to complete sociodemographic questionnaire.
Results.
Out of 17 HIV vertically infected children tested up to day 11 met criteria for at least one current or past psychiatric disorder according to DSM-IV including ADHD, mood and anxiety disorders. One patient met criteria for five psychiatric disorders. Mean age of HIV diagnosis in group of children with diagnosed psychiatric disorders was 28 months, mean age of antiretroviral treatment introduction was 33 months. Mean age of HIV diagnosis in group of children with no psychiatric diagnosis was 4 months, mean age of antiretroviral treatment introduction was 5 months.
Conclusions.
11 of 17 of HIV vertically infected children presented symptoms of at least one psychiatric disorders. Early diagnosis and treatment contributes to better psychiatric outcome in children with vertically acquired HIV. The results of the pilot study suggest that the continuation of the study is justified.
The project was financed with the National Science Centre grant. Decision no.DEC-2012/05/N/NZ7/02139

**NR4-071**

**SOFT NEUROLOGICAL SIGNS AND ANTI-OXIDANT DEFENCE ENZYMES IN ACUTE SCHIZOPHRENIC MALE PATIENTS**

*Lead Author: Cedo Miljevic*
*Co-Author(s): Aleksandra Nikolic-Kokic Ph.D, Dusko Blagojevic Ph.D, Cvetana Crnobaric M.D.,M.Sc., Sanja Nikolic M.D. M.Sc., Olivera Vukovica M.D., M. Sc., Dusica Lecic-Tosevski M.D., Ph. D., Mihajlo B. Spasic Ph. D.*

**SUMMARY:**
Schizophrenia is a complex psychiatric disorder which is conceptualized as a disorder of aberrant neurodevelopment. There is strong evidence suggesting the presence of subtile, non-specific, non-localised neurological deficits ["soft neurological signs" (SNS)] in schizophrenia. Abnormalities in various components of the anti-oxidant defence system (ADS) in schizophrenia are also well documented. This study aimed to explore the relationship between antioxidant enzyme activities and neurological soft signs (NSS) in a sample of patients with acute schizophrenia. 24 acute schizophrenic male, patients treated with risperidone or olanzapine and 30 matched healthy controls were recruited. NSS were assessed in two groups by a standardized neurological examination, also specific NES subclusters were calculated (sensory integration dysfunction' (SID), motor coordination dysfunction' (MCD) and CMS complex motor sequences). The red blood cell (RBC) antioxidant activity of superoxide dismutase (SOD), glutathione peroxidase (GSH-Px), catalase (CAT), and glutathione reductase (GR) were measured. RBC activities of all enzymes were lower in the patients compared to control group. All NSS scores were significantly higher in the patients compared to healthy controls' scores. In the patients, significant positive correlations between SOD and SID as well as between GR and both CMS and total NES score were found. The association between low SOD activity as a marker of oxidative stress and NSS in schizophrenic patients suggests possible a common pathological process of these abnormalities

**NR4-072**

**THE PREVALENCE OF POSTTRAUMATIC STRESS DISORDER IN SERBIAN WAR VETERANS**

*Lead Author: Zeljko Spiric, M.D., Ph.D.*
*Co-Author(s): Miro Cavaljuga, M.D., Ph.D., Viktorija Cucic, M.D., Ph.D., Bojana Matejic, M.D., Ph.D., Radomir Samardzic, M.D., Ph.D.*

**SUMMARY:**
Introduction:
The assessment of health status and health needs of Serbian veterans of wars during the nineties in Ex-Yugoslavia, was conducted under auspices of the Serbian Ministry of Labour and Social Politics from April to October 2008, in two phases: the field survey and targeted survey of mental health on the subsample.
Objectives:
The aims of the second phase was to establish the prevalence of mental health disorders, especially current and lifetime posttraumatic stress disorder (PTSD), and the quality of post-war adaptation, meaning the level of psycho-social functioning in basic life circumstances (familial, socio-economic, professional).
Method:
The multi-stage sample of the first phase was selected from 40 representative municipalities in Serbia and in each municipality was chosen 8 research points. Ten respondents-veterans were included in each point. Research instrument was a questionnaire, designed and pretested for the first research phase. There were 2370 respondents (79% of the planned sample), mean age 45.7 years with only 21 female. The diagnosis of

posttraumatic stress disorder (PTSD) was documented in 18.6% of respondents, and during the time of research 12.4% of them were still under the treatment. The second research phase focused solely on male participants. There were 302 respondents (50.3% of the planned sample), but 7 participants discontinued their participation during testing, so in the final analyses and interpretations, the results gathered from 295 war veterans were taken into consideration. Intensity and frequency of PTSD symptoms were estimated by Clinician Administered PTSD Scale (CAPS). Psychiatric comorbidities were diagnosed using Structured Clinical Psychiatric Interview (SCID-I). Various aspects of postwar psychosocial adaptation were documented by specially created questionnaire. Finally, quality of life was estimated by Manchester Short Assessment of Quality of Life (MANSA).
Results:
Aside of PTSD most frequent psychiatric disorders were depressive disorders (22,4%) and anxiety disorders (7,1%). PTSD was present in 28,8% veterans in this study. Current PTSD was find in 8.8%, and lifetime PTSD was present in 20% of examined veterans. Veterans with PTSD had much more comorbid psychiatric disorders than veterans without PTSD. All indices of psychosocial adaptation (personal, social and professional functioning) were very low and negatively correlated with intensity of PTSD. Quality of life was much lower in group of veterans with PTSD related to veterans without PTSD.
Conclusion:
Postwar adaptation for most of war veterans in Serbia was painful experience of coping with psychological remnants of war traumas, and very slow and incomplete adaptation to postwar society. Specially vulnerable veteran subgroup are those with actually present PTSD symptoms who have significantly more comorbid disorders, and much lower quality of life.

**NR4-073**
**PARANEOPLASTIC SYNDROME AND MANIC EPISODE**
*Lead Author: Julio Martínez, M.D.*
*Co-Author(s): Margarita Pascual, M.D., Cristina Garcia, M.D.*

**SUMMARY:**
Case report: A 49 years old female patient with a previous diagnosis of a microcytic lung cancer (three months before) was admited to Oncology ward, suffering from headache, insomnia and behavioural changes.
In hospital she displayed psychomotor hyperactivity, insomnia, pressure of speech and she denied being ill. She talked about being poisoned, and seems to suffer from ocassional auditory and visual hallucinatios. In spite of being treated with high dose of haloperidol and Diazepam for two days, no significant change is observed into her behaviour.
Neurological exploration is normal, no other blood test and organic features are present. MRI brain Scan showed lymbic encephalitis and NMDA antibodies are present. She responsed to 10 mg of Asenapine, with full remission of symptoms in the following eight hours to drug administration.
Conclusions: Alterations into NMDA pathway seems to be related to psychotic symptoms activation. NMDA antibodies (in a neoplastic syndrome) appears to be related to psychotic features, whether manic episode is unsual. Atypical antipsychotic is apparently more efficient than D-2 blockers, both in controlling symptoms and full remission.

**NR4-074**
**TOO SWEET OR TOO MAD. STIGMA OF MENTAL ILLNESS WITHIN MEDICAL SETTINGS**
*Lead Author: Jose Martinez-Raga, M.D., Ph.D.*
*Co-Author(s): Giovanna Legazpe, M.D., Julia Cebrian, M.D., Monica Miñano, M.D., Cristina Saez, M.D., Vicente Balanza, M.D, Ph.D., Roman Calabuig, M.D.*

**SUMMARY:**
Introduction/Hypothesis. Stigma, prejudice and discrimination have been widely recognized as important obstacles to the life opportunities of people with mental illness. often health care professionals contribute to further raise stigma. New technologies and computerized records can be very helpful in fighting stigma, but inadequate diagnosis may further contribute to perpetuate stigma of patients.
Methods. Two cases are here presented where mental health problems may have long-term consequences to the individual.
Results. Patient 1 is twelve year old girl without any relevant medical history and no personal history of psychiatric problems. She was referred for inpatient admission after developing increasingly severe and out-of-character behavioral problems (v.gr., damaging furniture or torturing family pets) over the recent four months. She had become increasingly defiant and authoritative, lacking empathy. As indicated by her parents problems coincided with symptoms like polyfagia, polydypsia and insomnia, but the latter where initially considered manipulative. During the inpatient stay and after spending the first 24 hours in a general adult psychiatric ward and several psychiatric diagnoses, that were registered in her electronic record. However, after several lab tests she was diagnosed as having Diabetes Mellitus 1 and Celiac diseas with good response to iisulin and dietetic measures, with full remission of behavioral proems.
Patient 2 is a 44 year old woman referred by the Endocrinologist following episodes of symptomatic hypoglicemia for the recent three weeks. She had experienced hyperhidrosis, tachycardia and excessive restlessness. After careful evaluation by the endocrinologist an organic cause was ruled out. Symptoms appeared to likely to be due to exogenous intake of insulin, therefore referring the patient to the psychiatrist. No abnormal beliefs experiences or perceptions were evidenced, similarly there were no affective symptoms, as well as no cognitive deficits. Furthermore there were no formal thought disorder as well as no ideas of self-harm. She was finally diagnosed as having Munchausen syndrome.
Discussion / Conclusions. The concept of mental illness covers a wide range of disorders with overlapping symptoms with other medical disorders. Therefore organicity, including a substance use disorder. Failing to identify the psychiatric origin o the disorder or overtly assuming a psychiatric cause can have major implications on patients care and future developments, particularly since electronic record will retain inappropriate diagnosis in patients records, currently difficult to change but that may potentially affect patients future care.

**NR4-075**
**NON ATTENDANCE OF PSYCHOTIC PATIENTS TO FIRST AMBULATORY CONSULT AS A RISK FOR HOSPITAL ADMISSION: A SURVIVAL ANALYSIS**

*Lead Author: Gema Medina Ojeda, D.M.*
*Co-Author(s): Javier Cepeda Casado , M.D. , Alicia Rodriguez Campos ,M.D. , Enrique Perez Ruiz, M.D., Gloria Rodriguez Carretero, M.D.*

**SUMMARY:**

Key words: Psychotic, schizophrenia, admission, case-management
Introduction: The search of predictive factors for hospital admission in psychotic patients has been consistent in clinical research. In this way, many different studies have considered the age of onset, course of disorder, antipsychotic treatment, duration and number of previous admissions, delusions, negative symptoms and case-management .It is known that non-attendance at first consult appointment in ambulatory psychiatric services of these patients increase waiting lists and the consumption of human and material resources. However, non-attendance at first appointment has been poorly considered as risk for admission. We aimed to test the hypothesis that patients who do not attend the first appointment have increased risk for hospital admission.
Methods: A retrospective chart review was conducted on patients ages 18-90 meeting any DSM IV-TR diagnostic of schizophrenia and other psychotic disorders, who were appointment to their first psychiatric consult from January 1, 2012 to December 31, 2012 in a ambulatory psychiatric center in Valladolid (Spain). Patients were divided into those who attend first appointment (AF+) and those that do not (AF-). Descriptive and survival analyzes were performed. Primary outcome measures were the impact of admission of non-attending patients and time to admission in the study period.
Results: 45 patients with any psychotic disorder of 1,332 first consults (3.37%) were included in the study. 51% were male. The mean age was 50.30 years (DT 15.80%). No significant differences were found. Survival analysis using Cox regression showed significant statistical difference between groups (p = 0.038). In AF+ group mean time to admission was 306 ± 18 days, in AF- group was 212 ± 47 days (median 308 days). Patients of AF- group were more likely to be admitted compared to AF+ group (hazard ratio = 4.02, p = 0.053).
Conclusions: Our results suggest that psychotic patients who do not attend the first consult in ambulatory psychiatric services have higher risk of admission compared to those who attend. Although the estimated risk is at the limit of statistical significance in Cox regression (p = 0.053), we consider it may be clinical relevance. While our results are probably limited by a short study period, they should prompt clinicians to maximize case-management and guide patients to their first psychiatric consult.
Literature review:
1.- Predictors of Admission in First-Episode Psychosis: Developing a Risk Adjustment Model for Service Comparisons. Donald Emile Addington et al. Psychiatric Services. May 2010; Vol. 61, No. 5
2.- Modifiable Risk Factors for Hospitalization Among People with Psychosis: Evidence from the National Study of Low Prevalence (Psychotic) Disorders. Vera Morgan, Ailsa Korten and Assen Jablensky. Aust N Z J Psychiatry 2006; 40: 683

**NR4-076**
**SEASONAL SERUM MELATONIN CHANGES IN PATIENTS WITH ACUTE PARANOID SCHIZOPHRENIA**

*Lead Author: Armando L. Morera-Fumero, M.D., Ph.D.*
*Co-Author(s): Estefania Diaz-Mesa, M.D, Ph.D., Pedro Abreu-Gonzalez Ph.D., Maria R. Cejas-Mendez, M.D., Ph.D., Lourdes Fernandez-Lopez, M.D., Ph.D., Silvia Yelmo-Cruz, M.D., Eduardo Vera-Barrios, M.D.*

**SUMMARY:**

Background: Research on blood melatonin (MLT) concentrations in schizophrenia has reported controversial results (1). Several biological variables present seasonal variations (2). Methodological flaws may be committed if those variations are not taken into account. Objective: Studying if schizophrenic patients' serum MLT concentrations show seasonal changes. Methods: Twelve patients comprised the summer sample while 9 patients comprised the winter sample. All subjects met DSM-IV criteria for paranoid schizophrenia and were admitted at the University Hospital of the Canary Islands because of an acute relapse. At admission and discharge, blood samples were drawn from the antecubital vein at 12:00 and 00:00 hours. Serum MLT levels were determined by ELISA. The study was carried out in accordance with the Helsinki Declaration. All subjects or their families, in case of a transitory patient disability, signed the consent form before being included in the study. MLT levels were compared by means of the Student t-test. Data are presented as mean±SD (picograms/milliliter, pg/ml). Significance level was set at 0.05. Results: Patients displayed significant summer/winter differences in serum MLT concentrations at 12:00 h (summer: 2.72 ± 1.36 vs. winter: 7.22 ± 1.60, p=0.001) and at 00:00 h (summer: 26.98 ± 18.23 vs. winter: 64.02 ± 41.41, p=0.03) at admission as well as at discharge at 12:00 (summer: 2.69 ± 1.36 vs. winter: 7.66 ± 1.31, p=0.001) and at 00:00 h (summer: 26.47 ± 16.21 vs. winter: 74.97 ± 42.23, p=0.009). Conclusions: Acute relapsed schizophrenic patients present seasonal changes in serum MLT concentrations. Those changes should be considered when researching in this area, in order of reducing the variability of the research results.
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**NR4-077**
**USE OF LONG-ACTING PALIPERIDONE PALMITATE IN A SHORT-TERM PSYCHIATRIC INPATIENT UNIT IN MADRID, SPAIN**

*Lead Author: Santiago Ovejero, M.D.*
*Co-Author(s): SERGIO SANCHEZ-ALONSO, M.D.*

**SUMMARY:**

Aim: The aim of this study is to make a naturalistic evaluation of the use of long-acting paliperidone palmitate in a short-term psychiatric inpatient unit at Madrid, Spain.
Material: This study is composed of 60 psychiatric inpatients sample treated with long-acting paliperidone palmitate. Diagnostics among the sample are schizophrenia (n=33), schizoaffective disorder (n=2), delusional disorder (n=9), psychosis NOS (n=8), bipolar disorder (n=7) and personality disorder (n=1).
Results: The average inpatient stay is 13 days. The antipsychotic monotherapy with long-acting paliperidone palmitate is 38,33%

(n=23). The re-entry rate is higher for those inpatients who have not received the second dose of paliperidone palmitate in hospital unit versus who those inpatients have received the second dose in the psychiatric unit, odds ratio=9,33 (p=0,002). Conclussions: Inpatients with long-acting paliperidone palmitate have a short hospital stay. The use of paliperidone palmitate as antipsychotic monotherapy in a short-term hospitalization unit may open new options of treatment.

**NR4-078**

**STUDY OF PATIENTS ADMITTED IN INTENSIVE CARE UNIT AFTER SUICIDAL ATTEMPT**

*Lead Author: Eduardo Paz Silva, Ph.D.*
*Co-Author(s): Alberto De la Cruz-Davila, M.D., Jesus Gomez-Trigo-Baldominos, M.D., Alfonso Mozos-Ansorena, M.D., Monica Mourelo-Fariña, M.D., Mario Paramo-Fernandez, Ph.D., Manuela Perez-Garcia, M.D.*

**SUMMARY:**
INTRODUCTION. Suicidal attempts have been studied by many authors to discover risk factors and try to identify the main causes, in order to prevent them. But there is a gap in the evaluation of the patient who has already made a suicidal attempt and has stated an income in Intensive Care Unit (ICU).
OBJECTIVE. To know the suicidal behavior of patients admitted to an intensive care unit, in order to be able to develop a multidisciplinary approach to the patient, to try to avoid high-risk situations consummate suicide after discharge medical stabilization of the patient by somatic.
METHODS. A prospective study of two samples of patients seen by suicidal attempts: patients evaluated in hospital emergency service (n = 59) vs patients requiring hospitalization in the ICU (n = 30). It has implemented a data collection protocol with different clinical variables. Study period: one year. An analysis of the study variables by SPSS 17 is performed.
RESULTS. A number of parameters were studied in cases requiring ICU admission, compared with those who required assistance in the emergency department (ER). In both groups, female gender was predominant (71.2% in ER, 80% in ICU). Marital status was compared, predominantly married couples in ICU (45.8%) and singles in the ER (45.8 %). As to diagnosis, anxiety disorders predominated in ER while in ICU were affective disorders (42.4%, 36.7% respectively). In both groups, the suicide attempt occurred during a weekend and also matches the method, predominantly drug overdose (83% in the ED, 56.7% in ICU). In the group of patients admitted to ICU, 60% of patients made a previous attempt, compared to 37.3 % of patients seen in the ER, having this rescue group most likely (89.9 %) compared to those admitted to ICU (53.3%). Another aspect studied was the planning , being 16.9% in patients in the ER (80% of whom are men), compared to 34.5 % of patients requiring ICU admission (90%) women.
CONCLUSION. As expected, a priori, in ER with less planning attempts (high impulsiveness) and greater possibility of rescue are measured, although the possibility of rescue in ICU stands at 53.3%. In ER, there is more planning in men (statistically significant difference), unlike that found ICU planning, where women reach 90%. It is noteworthy that in UCI predominate affective disorders, whereas patients in ER, anxious disorders were prevalent.
LITERATURE REVIEWS

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**NR4-079**

**POOR INSIGHT IN SCHIZOPHRENIA: CORRELATE WITH NEUROCOGNITIVE IMPAIRMENT**

*Lead Author: Manuela Pérez García, M.D.*
*Co-Author(s): Julio Brenlla-González, Ph.D., Jesús Gómez-Trigo-Baldominos, M.D., Mario Páramo-Fernández, Ph.D.*

**SUMMARY:**
Poor insight in schizophrenia: Correlate with neurocognitive impairment
INTRODUCTION: Cognitive impairment in Schizophrenia mainly affects areas such as: attention, memory and executive functions. Poor insight or unawareness of illness has been commonly observed in schizophrenia, and correlates to cognitive impairment. Moreover, poor insight influences adherence to treatment and the decision to discharge a patient safely.
OBJECTIVE: The purposes of the study were to examine insight degree in schizophrenia and to analyze the correlation between insight degree and neurocognitive impairment in these patients.
MATERIAL AND METHODS: The sample is made up of patients who comply with the DSM-IV criteria for the diagnosis of schizophrenia, with at least one admission in a Psychiatric Unit. It was designed a specific protocol for collecting socio-demographic and clinical variables and all patients have been assessed with the Positive and Negative Syndrome Scale (PANSS), the Wisconsin Card Sorting Test (WCST) and Event-related potentials (P300). These variables were analyzed using a statistical package SPSS 17.
RESULTS: 50 schizophrenic patients (74% males) with mean age of 36.64±11.16 years. Bachelorhood prevails (62%) and life together with origin family (66%). 74% are pensioners. 48% show comorbidity with the consumption of toxic substances. Last admission has been motivated in a 64% by a wrong compliance of the prescribed treatment and its average length has been of 25.48±17.58 days.
Results show that 19.1% of the subjects had partial awareness of mental disorder and 66% had lack of insight. In both groups, there were a poor WCST performance in >60% of patients. Results of amplitude and latency measures of P300 in patients with lack of insight vs measures in patients with good insight: 5.31 µV and 322.16 mseg. vs 6.59 µV and 305.14 mseg. at the midline central electrodes sites; 6.15 µV and 324.68 mseg. vs 8.08 µV and 310.57 mseg. at the midline parietal electrodes sites.
CONCLUSION: Most of schizophrenic patients possess poor insight. Schizophrenic patients with lack of insight had a poorer performance on neuropsychological test (WCST); the P300 amplitude was smaller and the P300 latency was longer at the midline parietal and central electrodes sites.

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**NR4-080**

**ASSOCIATION BETWEEN RS1414334 POLYMORPHISM HTR2C GENE AND THE METABOLIC SYNDROME IN PATIENTS USING ATYPICAL ANTIPSYCHOTICS**

*Lead Author: JoseMaria Rico-Gomis*
*Co-Author(s): Ana Garcia, Raquel Garcia, Jessica Jimenez, Luis F. Mahecha, Maria J. Martinez, Andres Navarro, Irene Triano, Berta Villagordo*

**SUMMARY:**
Background
Cardiovascular diseases are shown to be the main cause of mortality in patients diagnosed with severe mental illness. Due to this, life expectancy is reduced in this population. The increasing prevalence of metabolic syndrome is a factor to take into account. Furthermore, it is known that use of atypical antipsychotics increases the risk of metabolic syndrome. Certain genetic polymorphisms seem to favor the risk of developing metabolic syndrome in patients treated with atypical antipsychotics.
Aims
The main objective of this study is to analyze whether the presence of the C allele in the rs1414334 polymorphism HTR2C gene is associated with a higher prevalence of metabolic syndrome in patients treated with atypical antipsychotics.
Method
An observational cross-sectional study was taken out where all patients were selected at the outpatient psychiatric ward at Hospital General Universitario de Elche in Alicante, meeting the following criteria: patients over 18 years old with a diagnosis of schizophrenia, schizophreniform disorder, schizoaffective disorder, other psychotic disorders and bipolar disorder ( DSM- IV ). All patients selected were on antipsychotic medication or were prescribed atypical antipsychotics at least 12 weeks before initiating the study. Metabolic syndrome was diagnosed according to the NCEP definition ATPIIIa (National Cholesterol Education Program 's Adult Treatment Panel III).
Socio-demographic data on all patients was collected and a blood test was performed to determine fasting glucose, total cholesterol, HDL cholesterol and triglycerides. Anthropometric measurements and blood pressure readings were registered and analysis of the presence of the C allele in the rs1414334 polymorphism HTRC2 gene was performed.
Results
A total of 137 patients who met the criteria were included of which 55% were male patients and 45% were female patients. Metabolic syndrome was diagnosed in 36% of these patients. The C allele rs1414334 polymorphism HTR2C gene was found in 26 of our patients (19%). Among the C allele carriers, metabolic syndrome was diagnosed in 31%. In the group pf patients who were not carriers of the C allele rs 1414334 polymorphism HTR2c gene (111 patients), metabolic síndrome was diagnosed in 37% of cases ($p < 0.01$). Furthermore, in the group of patients that carried the C allele, 65% were women compared to 35% in the group without the C allele rs 1414334 polymorphism HTR2c gene .
Discussion
In view of the results, we found that there are differences between the presence of the C allele rs1414334 polymorphism HTR2C gene related to metabolic syndrome, showing this to be a potential protective factor, in contrast to data found in previous studies.
Due to the statistically significant data found in our study, gender should be considered in further research studies, as a possible confounder factor due to the difference in the proportion of men and women found in these two groups.

**NR4-081**

**COGNITIVE FUNCTION IN PATIENTS WITH FIRST DEPRESSIVE EPISODE AND RECURRENT DEPRESSION**

*Lead Author: Miquel Roca-Bennasar, M.D., Ph.D.*
*Co-Author(s): Adoración Castro, M.Psych., Mauro García-Toro, M.D., Ph.D., Margalida Gili, Ph.D.,Clara Homar, M.Psych., Emilio Lopez-Navarro M.Psych.*

**SUMMARY:**
Introduction: Cognitive symptoms are core symptoms of depressive disorders (McIntyre et al., 2013). The aim of the study was to analyze the cognitive performance between first episode depression and two groups of recurrent depression (RD): less than three previous episodes and three or more previous episodes.
Methods: This observational cohort study included 82 patients with DSM-IV-TR diagnostic of acute episode of major depressive disorder. The instruments used for clinical assessment were: 17-item Hamilton Depression Rating Scale, Mini-Mental State Examination and the Clinical Global Impression Rating Scales. Instruments for cognitive assessment were Trail Making Test parts A and B, Digital Span subtest of WAIS, Stroop Color Word Test, Tower of London, Controlled Verbal Fluency Task, Semantic Verbal Fluency, and Finger Tapping Test.
Results: Significant differences were found between the three groups in demographic characteristics but not in clinical variables. Also, comparing first episode depression (n=29) with RD less than three previous episodes (n=29), scores were significant lower for recurrent group in Stroop Color Word Test - Part I ($Z=-2.017$, $p=0.044$). When first episode depression was compared with RD three or more episodes condition (n= 24), significant differences were found against RD group for Stroop Color Word Test – Part II ($Z=-2.205$, $p=0.027$) and Tower of London Total Problem-Solving ($Z=-2.184$, $p=0.029$). Comparing both groups of RD, patients with 3 or more previous episodes scored significant lower in Tower of London Total Execution Time ($Z=-2.011$, $p=0.044$).
Discussion: Patients with recurrent depression show a more impaired cognitive pattern than first episode depression patients, specifically in speed of information processing and planning and problem solving. Moreover, the number of previous

episodes seems to be associated to impaired problem solving ability

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**NR4-082**

**PSYCHOPATHOLOGY IN PATIENTS WITH EATING DISORDERS (ED) EXPOSED TO THEIR OWN BODY SHAPE**

*Lead Author: Carlos Rodríguez-Gómez-Carreño, M.D.*
*Co-Author(s): Luis Beato Fernandez, M.D*

**SUMMARY:**

The project aims to test the psychopathological evaluation by BSQ (Body Shape Questionnaire) in patients with Feeding and Eating Disorders and objectified in the test response following exposure of their own body image in these patients. Including 8 patients with purging anorexia, 10 patients with restrictive anorexia, 13 patients with purging bulimia, 7 patients with non-purging bulimia and 12 controls. Be calculated and compared changes in test scores, evaluating before and after exposure to their own body shape. All patients will be selected from those who come for treatment to the Eating Disorders Unit at Universitary General Hospital Ciudad Real and will be interviewed beforehand to confirm the diagnosis.

**NR4-083**

**VALIDATION OF A EUROPEAN SPANISH-VERSION OF THE COLUMBIA-SUICIDE SEVERITY RATING SCALE (C-SSRS) IN PSYCHIATRIC OUTPATIENTS.**

*Lead Author: Pilar A. Saiz, M.D., Ph.D.*
*Co-Author(s): Susana Al-Halabí, Ph.D., Patricia Burón, Psy.D., M. Paz García-Portilla, M.D., Ph.D., Marlén Garrido, Psy, D., Antoni Benabarre, M.D., Ph.D., Esther Jiménez, Ph.D., Jorge Cervilla, M.D., Ph.D., María Isabel Navarrete, Ph.D., Eva M. Díaz-Mesa, Psy. D., Leticia García-Álvarez, Ph.D., José Muñiz, Ph.D., Kelly Posner, Ph.D., María A. Oquendo, M.D., Julio Bobes M.D., Ph.D.*

**SUMMARY:**

Introduction: Clinicians need valid instruments to assess and monitor suicidal behavior in psychiatric populations. The C-SSRS has not been validated in Spanish, despite being the third most commonly spoken language in the world.
Aim: To examine psychometric properties of the European-Spanish version of the Columbia-Suicide Severity Rating Scale (C-SRRS) in a sample of psychiatric outpatients.
Method: Data are from a naturalistic, cross-sectional, multicentre, validation study conducted in Spain. Sample: 467 psychiatric outpatients [38.8% males; mean age (SD) = 46.93 (17.98)], 242 with a history of suicide attempt (SA) and 225 without it. Inclusion criteria: (1) age 18 years or more, male or female; (2) written informed consent to participate in the study; (3) currently receiving outpatient treatment for a psychiatric disorder. Instruments: Columbia-Suicide Severity Rating Scale (C-SSRS); Hamilton Rating Scale for Depression (HRSD); Beck Suicide Intent Scale (SIS); Medical Damage Scale (MDS).
In order to perform comparative analysis between the HDRS and the C-SSRS, C-SSRS severity scores were recoded into quantitative measures.
Results: Significant differences were found between patients with SA and without SA in the following variables: age ($t = 6.2$; $p < 0.000$), marital status ($\chi 2 = 19.4$; $p = 0.003$), educational level ($\chi 2 = 31.2$; $p < 0.000$), and work status ($\chi 2 = 20.6$; $p = 0.008$). Reliability (internal consistency): Cronbach's alpha was 0.68 for C-SSRS severity suicidal ideation, and 0.53 for C-SSRS intensity of ideation. Construct validity: the Pearson correlation coefficients between the C-SSRS severity and intensity of suicidal ideation scores were 0.44 ($p < 0.000$) for the total sample, 0.42 ($p < 0.000$) for patients with SA, and 0.19 ($p = 0.026$) for patients without SA. Regarding the C-SSRS severity score and the HRDS item 3, the Pearson coefficients were 0.56 ($p < 0.000$), 0.20 ($p = 0.002$), and 0.57 ($p < 0.000$), respectively for the total sample, patients with SA and patients without SA. For the sub-sample of patients with SA, significant Pearson correlations were found between total scores of the C-SSRS severity of ideation and the SIS ($r = 0.22$; $p = 0.001$). For the MDS, the Pearson coefficient was not statistically significant ($r = 0.11$, $p = 0.076$). Discriminant validity: Significant differences were found in C-SSRS severity and intensity suicidal ideation scales between patients with SA and those without it ($p < 0.000$). Likewise, based on the cut-point MDS score, significant differences were found in C-SSRS lethality score ($t = -4.4$; $p < 0.000$). Similarly, the C-SSRS severity score discriminated patients from each severity group based on the HRSD item 3 (suicide) ($F = 3.4$; $p = 0.0009$).
Conclusion: We found good psychometric properties, which suggest the European-Spanish C-SSRS is a reliable and valid instrument for assessing and monitoring suicide behavior in psychiatric populations.

**NR4-084**

**IS IT USEFUL THE SPECIFIC PSYCHIATRIC CARE PROGRAMS FOR SEVERE MENTAL ILLNESS IN HOMELESS POPULATION?**

*Lead Author: Sergio Sanchez-Alonso, M.D.*
*Co-Author(s): Manuel Paz Yepes, M.D., Santiago Ovejero García, M.D., Enrique Baca García, M.D., Ph.D.*

**SUMMARY:**

Objectives: The objective is to evaluate the effectiveness of specific psychiatric intervention in the homeless population housed in the largest shelter of Madrid, Spain.
Material: psychiatric assessment and monitoring is performed to 94 homeless patients that live at San Isidro Shelter. Psychiatric disorders were detected in 91 patients. Main diagnosis were schizophrenia (n=55), delusional disorder (n=7), bipolar disorder (n=5), depression (n=7), OCD (n=1), substance abuse (n=10) and organic mental disorder (n=6).
Results: After two years of intervention, the intervention has managed to keep track of 65% of patients (n=59). 45 % of patients (n=41) have been included in care continuity programs and the 33% of patients accessed rehabilitation resources (n=30). 35% of the patients (n=32) have improved their housing situation.
Continued psychiatric monitoring of patients is related with the access to rehabilitation resources ($p < 0.005$), with the inclusion in care continuity programs ($p < 0.005$), but not with improvement in their housing situation ($p = 0.96$).
Conclusions: Specific programs of psychiatric care among homeless people that suffers mental disorders are effective to

begin the process of rehabilitation. They are also effective for the inclusion of patients in care continuity programs. However, it has not been demonstrated to improve the housing situation of patients, although this may be due to the shortage of social resources for the homeless population

**NR4-085**

**THE MANACOR STUDY ON TREATMENT EFFECTIVENESS AND BURDEN OF MANIA**

*Lead Author: Eduard Vieta, M.D., Ph.D.*
*Co-Author(s): Juan Undurraga, M.D., Ph.D., Caterina M. Bonnin, Psy., Ph.D., Diego Hidalgo, M.D., Cristina Sáez, M.D, María Mur, M.D., Ph.D., Evaristo Nieto, M.D., Ph.D.*

**SUMMARY:**
Introduction:
There is strong evidence derived from randomised, placebo-controled trials, supporting the use of lithium, anticonvulsants such as valproate and carbamazepine, and most antipsychotics in acute mania. Despite this, manic states still represent a high burden from a health resource utilization perspective, patient functionality and/or persistent subsyndromic states. In addition, few observational studies have reported the effectiveness, security and burden of disease of manic patients in naturalistic conditions. The main objective of this study is to describe the general burden associated with manic episodes both in inpatients and outpatients in four University Hospitals in Catalonia (Spain).
Method: A total of 169 bipolar I disorder patients presenting an acute manic episode (based on DSM-IV criteria) were included and followed-up for 6 months. Upon acceptance, clinical and demographic variables were collected. We assessed effectiveness (YOUNG, HDRS-17), functionality (FAST) and health resource consumption, measured by means of days of hospitalization, re-hospitalizations and emergency department consultations.
Results: The majority of patients (78.7%) were hospitalized. Up to 82.1% of patients had comorbid substance use disorders. A high proportion of patients presented anxiety (15.1%), mixed symptoms (27.2%), and psychosis (56.8%). The vast majority of patients (98.2%) were treated with antipsychotics including aripiprazole, asenapine, olanzapine, quetiapine and risperidone, and most of them were in combination with mood stabilizers. The most commonly prescribed drug was lithium (43.8%). At one-month follow-up, patients presented 75% reduction of symptoms in the YMRS. Functional disability was reduced by 26% at one-month, however most of the sample remained significantly impaired during follow-up. Mean days of hospitalization were 19.8 (11.6). Furthermore, 11.9% of patients were readmitted during the study for a mean of 88.3 (55.9) days. Thirty-one emergency room visits were recorded during follow-up. Finally, at six-month 23% of the previously employed were still on sick leave.
Conclusions: Preliminary results from the MANACOR study showed that the most prescribed drugs for the treatment of mania are mainly antipsychotic combined with mood stabilizers, being lithium the most used. Mixed states and comorbidity with substance use was strikingly high in this population which contrasts with patients usually enrolled in randomized clinical trials. Despite this fact, the medication prescribed in this naturalistic setting was highly effective, though functional improvement was more limited. Observational studies provide useful insights into the outcome of patients who are mostly excluded from registration studies. This is particularly important in mania, where, as shown in the MANACOR study, over 80% of "real world" patients would never be included in a registration trial.
This work was supported in part by Lundbeck.

**NR4-086**

**QUALITY OF LIFE AND REMISSION STATUS: RESULTS FROM THE COAST STUDY**

*Lead Author: Birgitta Sameby, R.N.*
*Co-Author(s): Katarina Allerby, R.N., M.Sc., Cecilia Brain M.D., Tom Marlow, B.Sc, Margda Waern, M.D., Ph.D.*

**SUMMARY:**
Background & Purpose
Different aspects of self-rated quality of life (QoL) have been shown to be negatively correlated with positive and negative symptoms in schizophrenia. This is however contradicted in other studies were no certain relation was found. In a community based care model with ACT features, Integrated Psychiatry, treatment and care is focused on the patient's life as a whole. Reducing symptoms is one part of the treatment to help the patient reach his/her personal goals. We examined QoL in an Integrated Psychiatry setting for patients on oral antipsychotics for the treatment of schizophrenia and similar psychoses, hypothesizing that satisfaction with various aspects of QoL would be more common in persons who were in remission.
Method
Participants were recruited from outpatient clinics in the Gothenburg area to take part in the COAST study, a prospective naturalistic study on factors related to treatment adherence. There were 131 participants at baseline, 87 of whom had a clinical diagnosis of schizophrenia. Quality of life was self-rated by the patient using the Manchester Short Assessment of Quality of Life (MANSA). Patients indicated their satisfaction regarding 12 items on a 7-point scale where 1 = "could not be worse" and 7 = "could not be better". Satisfaction was defined here as a response ranging from 4 to 7. Four further items (crime and physical violence, having a friend and spending time with a friend) had "Yes/No" response options. Structured Clinical Interview for Symptoms of Remission (SCI-SR) was used to determine remission status. A person was considered to be in remission if all remission criteria were met at time of assessment. All SCI-SR ratings were carried out by the same psychiatrist.
Results
70 persons (53%) fulfilled the remission criteria at baseline. Remission was more common in women (67%) than men (46%, p=0.029). Fig. 1 shows the percentages satisfied or responding positively to each MANSA item by remission status. When individual MANSA items were included in a binary logistic regression model with age and gender, no item was found to have a significant relationship with remission status. In 10 of the 16 MANSA items, proportions who were satisfied were numerically larger among those in remission compared to those who were not. However, there were no significant differences in proportions.
Conclusion
Contrary to our hypothesis, we could not show a significant relationship between remission status and quality of life in this clinical sample. While this might in part be due to low study

power or the difficulty of measuring subjective QoL, it may also reflect the importance of assisting patients to reach their goals in different areas of life with other means beyond symptom reduction.

**NR4-087**

**PLASMA UREA CORRELATES WITH SEVERITY OF MAJOR DEPRESSION**

*Lead Author: Martin Samuelsson, M.D., Ph.D.*
*Co-Author(s): Kristina Lundberg, M.D.*

**SUMMARY:**
INTRODUCTION: The prevalence of major depression is 3-10% in an adult population. However, in patients with chronic kidney disease and in end-stage of renal disease, the prevalence is 24–50%. Urea is the major end product of protein metabolism, and is elevated in patients with renal failure. Blood urea is higher in depressed than in not depressed patients receiving dialysis. Urea accumulation in mice hippocampus has been suggested to cause depression-like behavior. Nitric oxide (NO) have been found to be elevated in patients with major depression, and urea have been reported to regulate the NO-system. Urea is also the major end product of nitrogen metabolism.
AIM: The influence of urea on major depression is poorly investigated in patients with kidney disease, and to our knowledge even less studied in patients without kidney failure. The aim of the present study is to investigate plasma urea in patients with major depression before and after receiving ECT.
METHODS: 23 somatically healthy patients with severe major depression (average MADRS score 37 points) and prescribed ECT by their psychiatrist were included in the study. The severity of depression was measured with MADRS. Plasma was collected before the first and after the third ECT. 42 healthy volunteers were recruited as controls. Urea in plasma (p-urea) was analyzed using high-performance liquid chromatography.
RESULTS: There was a positive correlation ($p<0.01$) between MADRS and p-urea for patients before ECT. When subgrouping the patients in responders (n=11) and non-responders (n=12) after three ECT sessions we noted a correlation between p-urea before ECT and responders ($p<0.05$) but not for non-responders (p=ns). The patients not responding to three ECT had before ECT lower p-urea than controls ($p<0.05$) whereas responders did not differ from controls (p=ns). P-urea was not affected when comparing concentrations before ECT and after three ECT in any group.
CONCLUSIONS: The severity of depression correlates with p-urea before treatment of major depression in somatically healthy patients. Patients responding to three ECT had no differences regarding p-urea compared to controls whereas non-responders had lower p-urea than controls.
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**NR4-088**

**FAMILIAL CONFOUNDING EXPLAINS THE ASSOCIATIONS BETWEEN NEIGHBORHOOD DISORGANIZATION AND PSYCHOSIS: A NATIONWIDE SWEDISH QUASI-EXPERIMENTAL STUDY**

*Lead Author: Amir Sariaslan, M.Sc.*
*Co-Author(s): Henrik Larsson, Ph.D., Brian M. D'Onofrio, Ph.D., Niklas Långström, M.D., Ph.D., Seena Fazel, M.D., Paul Lichtenstein, Ph.D.*

**SUMMARY:**
Importance: People living in socially disorganized areas have higher rates of psychiatric morbidity but the potential causality of such effects is uncertain.
Objectives: To test associations between neighborhood disorganization and individual risk for diagnosis of psychosis.
Design, Setting, and Participants: Population-based, cousin and sibling comparison design using the Swedish National Patient and Multi-Generation Registers. All children born in Sweden 1967-1989 that lived at least until age 16 years (n=2,255,280, including 1,709,675 full cousins and 1,624,709 full siblings) were included. Subjects were nested within 8,387 small and socially homogenous neighborhoods throughout the country. We calculated standardized disorganization scores based on four neighborhood characteristics (proportions of residents who lacked secondary school qualifications, were not married, immigrants and the crime rate). We linked individuals to the neighborhood exposure scores for the neighborhood in which they resided at age 15 years. Logistic regression models were used to investigate the associations between neighborhood disorganization and subsequent individual risk of psychosis. Within-extended and within-nuclear family estimates were used to assess familial confounding.
Results: Each standard deviation increase in neighborhood disorganization was associated with an increased odds (OR=1.21; 95% CI: 1.19-1.23) for psychosis. Adjusting for unmeasured familial risk factors shared by differentially exposed cousins substantially decreased this effect (OR=1.12; 1.06-1.17). Further adjustment for unobserved familial risk factors shared by differentially exposed siblings eliminated the association (OR=1.01; 0.94-1.08).
Conclusions: Excess risks of psychiatric morbidity in disorganized neighborhoods appear to result primarily from unobserved familial selection factors. Previous studies may have overemphasized the etiological importance of these wider environmental factors.

**NR4-089**

**PATIENTS WITH SCHIZOPHRENIA HAD LOWER PLASMA AND CSF CONCENTRATIONS OF THREONINE AND THE CONCENTRATIONS CORRELATED TO SYMPTOMS AND FUNCTION**

*Lead Author: Elisabeth I. Skogh, M.D.*
*Co-Author(s): Kristina Lundberg, M.D., Martin Samuelsson, M.D., Ph.D*

**SUMMARY:**
Introduction: Threonine and serine are amino acids phosphorylated by serine/threonine protein kinase (AKT). Studies on AKT in preclinical models have suggested it being of importance of

neuronal connectivity and neuromodulation.
Hypothesis: The aim of the present study was to investigate if the concentrations of threonine and serine in serum and cerebrospinal fluid (CSF) differed between controls and patients treated with oral olanzapine (OLA) as the only antipsychotic drug.
Methods: Thirty seven Caucasian outpatients suffering from schizophrenia or schizoaffective disorder according to DSM-IV criteria and 45 healthy volunteers were included in the study. Fasting blood samples were collected in the morning for analyses. Lumbar puncture was performed at close connection to blood sampling and was successful for 24 patients and all controls. The blood and CSF samples were stored at -70° C until analyzed. The OLA concentrations were analyzed (LC-MS/MS) and the amino acids were analyzed using high-performance liquid chromatography.
Results: Threonine concentrations were lower in plasma and CSF in the patients than in the controls (mean 112.7 SD ± 20.5 vs. mean 132.9 SD ±23.5, P= 0.0001 and mean 25.5 ± SD 4.8 vs. 28.6 ± SD 5.3, P= 0.02, respectively). The patients plasma and CSF threonine concentrations were both correlated to symptoms according to BPRS (rs -0.42 and -0.54 respectively, P<0.05) and also to function GAF (rs 0.49 vs. 0.46, P< 0.05). In plasma but not in the CSF serine levels was higher in the patients than in the controls (mean 131 ± SD 21.5 vs. mean 118 ± SD 17.9 P= 0.004) and there was a correlation between serum OLA concentrations and plasma serine (rs -0.47, P<0.05).

Conclusion/Discussion: The present study support earlier results from preclinical studies implicating the involvement of threonine in the pathophysiology of schizophrenia. The patients had lower plasma and CSF concentrations of threonine than the controls and the concentrations correlated to symptoms and function.
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**NR4-090**

**EVALUATION OF DEPRESSION, ANXIETY LEVELS AND SEXUAL FUNCTIONS OF THE SPOUSES OF BIPOLAR DISORDER AND SCHIZOPHRENIA OUTPATIENTS**

*Lead Author: Ayse F. Maner*
*Co-Author(s): Turkan Obekli, Psych, Ph.D., Sait Gün, Ph. D.*

**SUMMARY:**

Bipolar disorders and schizophrenia are important psychiatric disorders affecting psychological health of individuals, and cause burden for family members of patients (1.2) . It is reported that burden of caregivers causes some mental disorders(3,4). It has not found enough research focusing on anxiety, depression and sexual functions of spouses of the patients with bipolar disorder and schizophrenia .
Method: In this research, sexual functions, anxiety and depression levels of spouses of patients diagnosed bipolar disorder and schizophrenia schizophrenia and having outpatient treatment were examined. For this aim, spouses of 60 patients having bipolar disorder and schizophrenia schizophrenia and 60 individuals not having bipolar disorder and schizophrenia spouses were subjected to Hamilton Depression Scale (HDS), Hamilton Anxiety Evaluation Scale (HAS) and Arizona Sexual Experiences Scale (ASEX) at Bakirkoy Prof. Dr. Mazhar Osman Training and Research Hospital for Psychiatry, Neurosurgery and Neurological Diseases.
Results: Anxiety, depression and sexual dysfunction levels of respondents having bipolar disorder and schizophrenia spouses were higher than respondents do not having bipolar disorder and schizophrenia spouses (p<0,05). There was only statistically significant relation between anxiety and depression levels of respondents having spouses diagnosed bipolar disorder. Similarly there was statistically significant relation between anxiety and depression levels of respondents having spouses diagnosed schizophrenia disorder. The levels of depression and anxiety of the spouses of male patients with bipolar disorder and schizophrenia were statistically significantly higher than the spouses of female patients with bipolar disorder and schizophrenia.
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**NR4-091**

**A BIZARRE STYLE OF GENITAL MUTILATION IN A PATIENT WITH SCHIZOPHRENIA: A CASE REPORT**

*Lead Author: Ayse F. Maner*
*Co-Author(s): Özlem Çetinkaya, M.D., Derya İpekçioğlu, M.D.*

**SUMMARY:**

The presented patient was a 23 years old male and brought by his brother to our psychiatry hospital from urology clinic after the first aid due to removing his right testicles with a knife without any anaesthetic drog. The patient inserted three cherry seeds inside the injury and sewed up the injury and then he ate the removed testicle piece. He vomitted the eaten material when his brother saw what was happening. His life history revealed that the psychiatric disorder began insidiously in his late adolescence, he had taken no treatment up to then, and stayed in prison for three years due to injuring his chief with a knife due to persecutive delusions because his chief was giving harm to him. At admission to our hospital he was diagnosed paranoid schizophrenia and autism, flattening of affect, incoherant speeking, bizarre, somatic, nihilistic delusions were found at psychiatric examination. Flupentixole decanoate 50 mg/ 15 day IM, haloperidole 20 mg/day IM, biperiden 10mg /day IM administered at the beginning, then continued PO. At

the end of two weeks there was no change for the symptoms. Electroconvulsive therapy began and administered for ten times. There was only a mild remission, so clozapine was tried to use as 25mg/day and titrated to 500mg/day PO. He was externalized with a full remission by using clozapine 500 mg/day PO, haloperidole 10 mg/day PO, biperiden 4mg/day PO, quetiapine 300 mg/day PO.

Genital mutilations have been usually presented as case reports and generally seen rarely in young male patients (Greilsheimer et al., 1979; Romilly et al., 1996 ). Genital mutilations generally occur either in psychotic patients especially among schizophrenics or in individuals with impaired ego wholeness as an implication of lower self esteem or guilty feelings (Martin et al., 1991; Mitsui et al., 2002 ). Only 65% of 19 patients with genital mutilations over 10 years were found psychotic (Aboseif et al., 1993).The cases of genital mutilations were reported all around the world. Here are some examples. In Englang a chronic schizophrenic patient who mutilated genitals with feelings of sexual guilt due to mystic delusions was reported (Waugh 1986). Testicles mutilation was the first symptom of schizophrenia reported from USA (Myers et al., 2001; Large et al., 2006). Three cases of genital mutilation diagnosed as alcohol and substance abuse were reported in Morocco (Moufid et al., 2004) . The case reported in Japan was an adolescent who was amnestic about the episode and diagnosed as temporal epilepsy ( Ishibiki et al., 2006). Two schizophrenic relatives who previously set on fire their home, experienced genital mutilations due to mystic delusions, sexual conflicts and guilty feelings in Serbia (Ristic et al., 2008).The case reported from Nigeria was a 22year old student diagnosed as major depressive disorder attempted suicide after mutilating genitals and having history of two suicide attempts (

**NR4-092**

**MILD TRAUMATIC BRAIN INJURY IN A PATIENT WITH POST-TRAUMATIC STRESS DISORDER DETERMINED BY POSITRON EMISSION TOMOGRAPHY; A CASE REPORT**

*Lead Author: Barbaros Özdemir, M.D.*
*Co-Author(s): Engin Alagöz, M.D.Cemil Celik, M.D., Beyazıt Garip, M.D., Özdeş Emer, M.D., Taner Öznur, M.D.*

**SUMMARY:**

Mild traumatic brain injury (mTBI) with post-traumatic stress disorders have been rarely described in the literature. Symptoms which could be seen after mTBI are not specific. Many of the same symptoms occur as a result of other physical, non-brain, or emotional injuries or periodically in healthy people (headache, fatigue, irritability). Most of the studies have been published associated with effected brain region after the traumatic injury. We are going to present positron emission tomography (PET) results of case diagnosed with comorbid PTSD and mTBI. We present the first case of a 35-year-old white man with posttraumatic stress disorders (PTSD). He has exposed to multiple blasting effects during his military service. Patient was first admitted to mental health services after he experienced combat related traumatic life events for the first time in 2010. Most of the compliment associated with PTSD was recurring nightmares, hyper-arousal, re-experiencing symptoms and insomnia symptoms were described by the patient. He was assessed by the specialist and diagnosed with PTSD according to DSM-IV diagnostic criteria. Memory deficit, perception and attention impairments have revealed during the treatment period. Those were the main reasons of some of the social problems and becoming the debilitating health problems. To make a differential diagnosis and further evaluations, most of the tests included neuroimaging, lab, organic mental assessments were applied during the fallowing period. Biochemical test results were in a normal limit. Memory and attention problems could be seen as a result of organic mental tests administration. We decided to conduct further investigations involving neuroimaging technics to explore the pathology. These are the cognitive impairment occurred after blasting injury and becoming persistent would be well explained with mTBI. So we decided to make further neuroimaging evaluations to make a differential diagnosis. Computerized tomography (CT) and Magnetic Resonance (MR) have been applied respectively. Regional Metabolic Rate was also studied by using Positron Emission Tomography. CT and MR test results was in a normal range but significant metabolic abnormality revealed as a result of PET administration. According to PET results found that left temporal lobe lateral cortex global was hypo metabolic, middle region of parietal cortex in a small area was also hypo metabolic (Figure 1). Rest of the FDG distribution of the brain was in a physiological limit. These are the cognitive impairment occurred after blasting injury and becoming persistent would be well explained with mTBI. These findings suggest the possibility that persistent somatic, cognitive, and behavioral symptoms reported by Veterans with repetitive blast-related mTBI may have a neurobiological substrate that can be objectively measured by means of brain fluorodeoxyglucose (FDG)-PET imaging and that persistent post-concussive symptoms.

**NR4-093**

**RELATIONSHIP OF DOMESTIC VIOLENCE WITH SEVERITY OF PAIN, DEPRESSION AND ANXIETY LEVELS IN FIBROMYALGIA CASES**

*Lead Author: Urun Ozer, M.D.*
*Co-Author(s): Engin Badur, Psychologist, Cagatay Karsidag, M.D., Esra Selimoglu, M.D., Ersin Uygun, M.D., Goksen Yuksel, M.D.*

**SUMMARY:**

Objective: Domestic violence is accepted as a major health problem in the world and Turkey. Violence rate against women by their husbands or partners is reported as 10-69% by the World Health Organization. In a study from Turkey, rate of women who are exposed to physical violence by their husbands in any period of their life, is stated as 39%. In the literature, there are studies which indicate the relationship of domestic violence with somatic symptoms and chronic pain syndromes. Rate of violence is also found higher in fibromyalgia cases compared to control group, and a positive relationship is determined between the frequency of violence and fibromyalgia symptoms. In this study, it was aimed to investigate the relationship of domestic violence with clinical features as depression, anxiety levels and pain severity in female cases who applied to the physical therapy and rehabilitation outpatient clinic and diagnosed as fibromyalgia.

Method: The sample is constituted by 34 female patients who applied with pain to the physical therapy and rehabilitation outpatient clinic of a state hospital in Siirt, and diagnosed with fibromyalgia according to American College of Rheumatology

2010 criteria. Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, Visual Analog Scale which evaluate pain severity and clinical interview form for domestic physical violence were applied to cases.
Results: Domestic violence in childhood was found in 29.4% and domestic violence in adulthood in 38.2% of cases. A significant negative relationship was detected between pain severity and age at marriage (r=0.514, p=0.002) as well as education level (p=0.002). Domestic physical violence in marriage was found to be significantly related with pain severity (p<0.001). A significant negative relationship was detected between HAM-D (r=0.510, p=0.002), HAM-A (r=0.407, p=0.017) and age at marriage. A significant relationship was found between HAM-D (p<0.001), HAM-A (p=0.002) and physical violence in marriage. A positive correlation between pain severity and HAM-D (r=0.561, p=0.001) and HAM-A (r=0.420, p=0.013) was found. A significant positive correlation was found between HAM-D and HAM-A scores (p<0.001 r=0.793).
Discussion: Domestic physical violence was found to be related with pain severity and symptoms of depression and anxiety in our sample. Anxiety and especially depression levels were related with pain severity. Therefore during the treatment and follow up of fibromyalgia patients, investigation of domestic violence and evaluation of comorbid symptoms of anxiety and depression might be useful.

**NR4-094**

**STUDY OF RELATIONSHIP BETWEEN COMMON PERSONALITY DISORDERS AND ITS CLINICAL CHARACTERISTICS BY THE CASES WITH BIPOLAR-I DISORDERS**

*Lead Author: Recep E. Tan, M.D.*
*Co-Author(s): Latif Alpkan, M.D.,Nezih Eradamlar,M.D., Nese Ustun, M.D.*

**SUMMARY:**
In the recent years there is more interest about the effect of personality disorders on the course of illness and treatment bipolar disorder. By the bipolar-I disorder the question which of the personality disorders have been more frequent and dominant, and could not be answered clearly. The aim of this study is to determine the comorbidity frequence of the personality disorder on the patients with bipolar-I disorder and to study if the existence of the personality disorder effects on the course of the bipolar -I disorder.
Method: Ninetynine patients were included in the study from the euthymic period who were followed with the diagnosis of bipolar-I disorder based on the DSM-IV-TR diagnosis ciriteria, and who were followed with the structured following form in the Rasit Tahsin Mood Disorder Center of Bakirkoy Research and Training Hospital for Psychiatry, Neurology and Neurosurgery between the dates December 2009 - March 2010. These patients were evaluated with the SCID-II (Structured Clinical Interview for DSM-IV), Hamilton Depression Rating Scale and Young Mani Rating Scale.
Results: 38% of patients with bipolar-I disorder were determined at least one personality disorder. The personality disorders which were mostly determined on the patients were respectively hystrionic, obsessive compulsive and borderline personality disorders. When the patients were evaluated in the basis of groups for their personality disorders, the group B was found as 25,3 %, the group C as 19,3 %, the group A as 14,2 %. It was determined that the group with personality disorder has passed more depressive epizodes and attempted more suisides than the group which hasn't got personality disorder. By the group without personality disorder was the number of day the hospitalization more then by the group with personality disorder. The average of the manic episode number on the patients without personality disorder was found higher than on the patients with more than one personality disorder. By the comparison of the depressive episode characteristics between the groups the rate of atypical depression on the patients with more than one personality disorder was found higher. Also the rates of using of alcohol and substances by the patients with more than one personality disorder was found higher than by the patients without personality disorder.
Conclusion: Our study produced significant results about association of personality disorder and bipolar-I disorder and. revealed important results about the effect of personality disorder on clinical findings and course of illness in bipolar disorder. On the patients with bipolar-I disorder are the comorbidity of personality disorder widespreaded and this association is important due to the course of the bipolar-I disorder. To understand the association of the bipolar-I disorder and the personality disorder better, other studies where wide sample groups were selected and more centered are needed.

**NR4-095**

**THE RELATIONSHIP OF INSIGHT WITH QUALITY OF LIFE, DEPRESSION AND SYMPTOMATOLOGY IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Narin Tan-Kartal*
*Co-Author(s): Nezih Eradamlar, M.D., Neşe Üstün, M.D.*

**SUMMARY:**
AIM: To identify the importance of poor insight and associated factors are important for predicting clinical course and development of new therapeutic approaches. İn our study, we aimed to investigate the relationship of insight with quality of life, depression and symptomatology in patient with Schizophrenia.
METHOD: In the current study, 101 patients between ages of 18-65, during the period of February 2013-May 2013, receiving ongoing treatment in outpatient clinic of psychiatry in Prof. Dr. Mazhar Osman Research and Training Hospital for Psychiatry, Zeytinburnu Community Mental Health Center and Bakırköy Community Mental Health Center with the diagnosis of schizophrenia according to the DSM-IV-TR criteria, were enrolled. Participant in the study were evaluated by subjected to semi-structured sociodemographic and clinical form prepared by clinicians, Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Postive and Negative Syndromes Scale (PANSS), Schedule for Assesing the Three Components of Insight, The Quality of Life Scale for Schizophrenia Patients and Calgary Depression Scale for Schizophrenia (CDSS).
RESULTS: There was no significant relationship between insight and age, sex, educational level, age at onset of disease, number of hospitalizations, duration of illness and family history in patients with schizophrenia. Patients with a higher quality of life was associated with a better insight but in sub-scales of The Quality of Life Scale for Schizophrenia Patients, significant relationship was not found between insight and "Career Role". In patients with schizophrenia, there was a negative correlation between insight and positive symptoms, negative symptoms

and the severity of general psychopathology. So as the insight improve, severity of positive, negative, and overall symptoms reduced. There was no relationship between insight and depressive symptom and suicide attempt. With increasing insight in patients, treatment compliance increases and aggressive behavior decreases.
CONCLUSİON: Patient with poor insight, considered to be poor compliance of treatment, have lower quality of life and more severe symptomatology of disease. From this point, it can be concluded that, supportive psychotherapy for insight can positively affect the patients' adherence to treatment and quality of life, and therefore the clinical course of disease.

**NR4-096**
**1H-MAGNETIC RESONANCE SPECTROSCOPY IN OBSESSIVE-COMPULSIVE DISORDER: EVIDENCE FOR REDUCED NEURONAL INTEGRITY IN THE ANTERIOR CINGULATE**
*Lead Author: Rasit Tukel*
*Co-Author(s): Kubilay Aydin, M.D., Erhan Ertekin, M.D., Seda Sahin Ozyildırim, M.D., Cagri Yuksel, M.D., Vedat Taravari, M.D.*

**SUMMARY:**
Neuroimaging studies have suggested the dysfunction of the cortico-striatal-thalamo-cortical circuit as a key pathophysiologic feature of obsessive-compulsive disorder (OCD). Several studies have reported abnormal changes in the neural metabolite concentrations using proton magnetic resonance spectroscopy (1H MRS) among OCD patients. The aim of this study was to investigate the metabolic integrity of the anterior singulate, caudate and putamen in OCD. In the present study, 32 unmedicated OCD patients, including 23 who were drug-naïve were compared with 32 healthy controls to assess metabolite levels in the anterior singulate, caudate and putamen by using 1H MRS. Levels of N-acetylaspartate (NAA), choline (Cho) and myoinositol (mI) were measured in terms of their ratios with creatine (Cr). The ratio of NAA/Cr was significantly lower in OCD patients than in healthy controls in the anterior cingulate (p=0.002). There was a tendency for levels of NAA/Cr to be lower in the caudate and the putamen in OCD patients compared with healthy controls (p=0.05 and p=0.08, respectively). NAA/Cr ratios were negatively correlated with the Y-BOCS total scores in the anterior cingulate in OCD patients (r=-0.57, p=.001). Reduced relative concentrations of NAA in the anterior cingulate and to some extent in the striatum in OCD patients have been suggested a neuronal dysfunction indicating reduced neuronal integrity in these regions. Our results support the biochemical involvement of the anterior cingulate and striatum in the pathophysiology of OCD.

**NR4-097**
**RELATIONSHIP BETWEEN THE QUALITY OF MARITAL RELATIONSHIP AND SEXUAL FUNCTIONS IN POSTMENOPAUSAL WOMEN**
*Lead Author: MehmetHakan Turkcapar, M.D., Ph.D.*
*Co-Author(s): Kadir Ozdel, M.D., Ayse Figen Turkcapar, M.D., Canan Efe, M.D.*

**SUMMARY:**
Objectives: We evaluated the relationship between sexual function and the quality of marital relationship among a group of postmenopausal women. We hypothesized that the general evaluation of the partner relationship and sexual functions are highly related and this relation is independent from the age and menopause duration in postmenopausal women.
Methods: Consequent 67 postmenopausal women who present to the Climacteric Clinic of the Ankara ZTB Women's Hospital were enrolled the study. All participants were interviewed using a structural socio-demographic form and administered Relationship Assessment Scale (RAS) (Hendrick, 1988) and Female Sexual Function Index (FSFI) (Rosen et al., 2000). The data of 55 women who have spouses were analyzed for the relevant measures. Means and standard deviations were used for sociodemographical/ Clinical variables. To compare group means non-parametric test were used. Correlations and partial correlations were assessed using Spearman correlation tests.
Results: For the study group, mean age was 52.6 ±6.14 years, mean age at the beginning of the menopause were 46.46±5.58 years and mean duration of the menopause was 6.23±4.94 years. Mean age of their spouse was 55.55±6.92. Mean score for the RAS for the group was 33.75±9.02 (of the total 49). RAS total scores in which higher scores indicates the more satisfaction with the relationship, were positively correlated (even controlled for the age and menopause duration) Arousal, Lubrication, orgasm, satisfaction, and pain subscale of the FSFI. However RAS total scores were not correlated with Desire subscale of the FSFI.
Conclusion:
Study population consisted of relatively young post-menopausal women and their perception of relationship quality was fair in average (mean=4.82).
In this group perceived general relationship quality was strongly correlated with arousal, lubrication, orgasm, satisfaction, and painlessness components but not correlated with desire. However the item of the RAS that measure general satisfaction in the relationship was correlated with desire. As expected general satisfaction of the relationship is highly related with sexual functions in postmenopausal women, and this relationship seems independent from age and menopause duration. These results are in consistent with the previous literature that concluded that relationship factors were more important to low sexual function than age or menopause (Hayes et al., 2008)
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**NR4-098**
**NEGATIVE SYMPTOM SUBGROUPS HAVE DIFFERENT EFFECTS ON CLINICAL COURSE AFTER FIRST EPISODE OF SCHIZOPHRENIA: A TWENTYFOUR-MONTH FOLLOW-UP STUDY**
*Lead Author: Alp Ucok, M.D.*
*Co-Author(s): Ceylan Ergül,M.D.*

**SUMMARY:**
Abstract
Background: Recent factor analytic studies show that nega-

tive symptoms in schizophrenia have two subgroups: expression deficit (ED) and motivation-pleasure deficit. The aim of this study is to assess the factor analytic structure of negative symptoms in first-episode schizophrenia (FES) , and to investigate the relationship between these? factors and the course and functioning during two-year follow-up.
Methods: We assessed 176 drug-naive patients with FES using the Brief Psychiatric Rating Scale , the Scale for the Assessment of Negative Symptoms , the Scale for the Assessment of Positive Symptoms , the Global Assessment of Functioning (GAF) Scale, the Premorbid Adjustment Scale and an 8-item cognitive battery at admission. Symptom rating scales were repeated at monthly outpatient visits for two years. We also recorded patients' functioning levels, remission and work status at the 12th and the 24th months.
Results: A two-factor structure consisting alogia-blunted affect (ED) and avolition-anhedonia (AA) factors was found at the baseline, whereas only one factor was found in the 12th and the 24th months. ED factor was related with earlier onset and remission status and negatively correlated with duration of education and cognitive test scores, . AA factor was related with DUP, family history of schizophrenia, work status before admission and follow-up and appeared as the only independent variable that contributes to GAF score at admission in linear regression analysis.
Conclusion: Our findings suggest that the two factors have different etiologies and impacts on the course and functioning after FES.

**NR4-099**
**THE EFFECT OF GENDER ON CLINICAL SYMPTOMS AND COURSE OF ILLNESS IN BIPOLAR DISORDER**
*Lead Author: Nese Ustun, M.D.*
*Co-Author(s): Latif Alpkan, M.D., Burcin Demiragli, M.D., Nezih Eradamlar, M.D., Cigdem Kucukali, M.D.*

**SUMMARY:**
Objective: In recent years, the effect of gender on course of illness and treatment of bipolar disorder has been the focus of attention. Recent studies showed that there are significant differences in clinical findings and course of illness in female patients with bipolar disorder when compared to male patients. The aim of this study is to investigate the effect of gender differences in bipolar disorder.
Method: Our study includes the medical records in eight years period of first 200 Patients (100 female, 100 male) with bipolar disorder who were admitted to Bakirkoy Research and Training Hospital for Psychiatry, Neurology, and Neurosurgery, to be specific Tahsin Rasid Mood Center between the dates 1st of April 2003 and 1st of January 2004 and have been followed on a regular basis to the date 1st of April 2011. We retrospectively rewieved the medical records by using a form which made by us including the variabilities to compare gender differences.
Results: 62% of female patients and 46% of male patients were married. 70% of women had lower levels of education. 65% of women and 56% of men had advense life event at the onset of their first episode. The first episode diagnosis of 51% of women and 62% of men were mania. The average duration of first episode in women was 52,3, in men it was 43.7 days. The total number of depressive episodes was 2,1±3.22 for women, and was 1,2 ± 1.72 for men. Seasonality was present in 39% of women and 24% of men and 13% of women and 5% of men had rapid cycling. 42% of women and 26% of men have traumatic life event and 33% of women and 23% of men had suicide attempts. While there were not any histories of alcohol and/or psychoactive substance use in women, 16% of men had alcohol abuse and 8% of men had a history of cannabis abuse. 32% of women and 2% of men had comorbid thyroid disease. While 9% of men had illegal conducts, women did not have illegal conducts.
Conclusion: Our study revealed important results about the effect of gender differences on clinical findings and course of illness in bipolar disorder. The major differences idendified in our study are; more life events prior to episode, longer and more psychotic episodes, more depressive episodes, more rapid cycling episodes, more incidence of comorbid hypothyroidism, more seasonal course of the illness, more incidence of comorbid psychiatric illness in women, whereas more incidence of alcohol and/or substance abuse, more illegal conducts during episodes in men. Prospective studies conducted in large samples are needed to better understand the effects of gender on bipolar disorder.
Keywords: Bipolar Disorder, Gender, Course Of Illness

**NR4-100**
**AN ANALYSIS OF PATIENTS WHO SOUGHT CARE AT THE EMERGENCY PSYCHIATRIC WARD OF A MENTAL HEALTH HOSPITAL: A CROSS-SECTIONAL DEFINITIVE STUDY**
*Lead Author: Nese Ustun, M.D.*
*Co-Author(s): Burcin Demiragli, M.D., Nezih Eradamlar, M.D., Cigdem Kucukali, M.D.*

**SUMMARY:**
An Analysis of Patients Who Sought Care at the Emergency Psychiatric Ward of a Mental Health Hospital: A Cross-Sectional Definitive Study
Objective: Our aim in this study was to assess the reasons why patients sought emergency care at the emergency psychiatric ward of our hospital over a one-month period. To achieve this goal, we noted their socio-demographic features and clinical diagnoses and evaluated how many of these referrals were really emergencies.
Materials and Methods: Out of the 2,000 referrals to our hospital's emergency psychiatric ward in August of 2011, 775 met the study criteria and were included in this study. The clinical diagnoses and socio-demographic data of these patients were then evaluated.
Results: Our research showed that 54% of the referrals were females while 46% were males. In addition, 45% were single, and 45% were married. We also discovered that 48% of the patients were primary school graduates, but 77% of these were unemployed. In addition, 61.8% of the patients were referred by their relatives, 27.3% were self–referrals, 6.7% were referred for consultation by another physician, and 2.5% were brought in under police escort. Furthermore, we determined that 36% of the patients were referred because of mood disorders, making that the most common reason. Psychotic disorders were the cause for referral for 22%, and 10.8% came to our facility to be treated for conversion disorders. Finally, we determined that 31% of the patients who sought emergency care were admitted to the hospital.
Conclusion: When the severity of the clinical findings of the pa-

tients who sought emergency care were analyzed, we concluded that 72% were indeed emergencies. However, the remaining 28% could have been treated in an outpatient clinic. Since most of the emergency ward walk-in patients are either self–referrals or have been referred by a relative, we believe that congestion in the emergency ward could be relieved by providing the patients and their relatives with better information about their diseases and the treatment process.
Key words: Emergency Psychiatry, Emergency Room Abuse, Clinical Diagnosis, Socio-demographic Data

**NR4-101**

**FOLLOWING PARANOID SCHIZOPHRENIA WITHOUT ANTI-PSYCHOTIC TREATMENT IN COMMUNITY MENTAL HEALTH CENTER**

*Lead Author: Cenk Varlik*
*Co-Author(s): Ahmet Guler, Psychologist, Ozge Hisim, M.D. , Dilek S. Varlik, M.D.*

**SUMMARY:**

Non-adherance to antipsychotic treatment frequently results in relapses in the course of Schizophrenia. It is noted that intermittent antipsychotic treatment is not as effective as continuous, maintained antipsychotic therapy in preventing relapse in people with schizophrenia. But still the rates of treatment adherance is around %40. We present an interesting case of a 28 year old man diagnosed with paranoid Schizophrenia, who has been followed in our community mental health care polyclinic fort he last 1 year without any antipsychotic medication without any relapses. Mr. M administered to Psychiatric ER in 2012 december for the first time. He complained about the voices coming from the neighbors, that was deliberately made to annoy him. His parents noted that he refused to eat and drink for he last few days, he continuesly talked with voices in his head, he was suspicious about everything and refused to go out of his room. He was admitted to the hospital, there was no sign of a neurological disease in his MRI and BT and no pathological findings in his bloodwork. Due to his clinical follow up in the 2 weeks that he was admitted he was diagnosed with Paranoid schizophrenia and started receiving Haloperidone 20mg/day, Biperiden 10mg/day. 4 months after he was discarded from the hospital he stopped using his medication. His parents broght him to our community clinic for follow up. Eventhough all the efforts he did not want to start any kind of medication but he agreed to visit the center weekly. We are following him without any medication for the last 1 year. PANNS and BPRS scores dropped thoughrout the follow-up. He is not working at the moment but he is attending a writing class weekly and sending his work to competitions. He is meeting with his friends from the writing community in every few days. He is following the activities in our center. His parents state that he is highly active at home. The results of this case rises the question of the neccesity of the continues antipsychotic use again.

**NR4-102**

**EFFECTS OF COMORBID ALCOHOL AND SUBSTANCE USE ON CAREGIVER BURDEN OF MALE SCHIZOPHRENIC PATIENTS**

*Lead Author: Menekse S. Yazar, M.D.*
*Co-Author(s): Alpkan R. Latif,M.D., Balaban, Ozlem,M.D., Depçe,Alper,M.D., Eradamlar,Nezih,M.D.*

**SUMMARY:**

Aim: In this study, we aimed to find the effects of alcohol or substance use on caregiver burden, quality of life , depressive symptoms and anxiety levels of caregivers.We also aimed to find out the effects of the symptoms of the disease and certain attributes of the patients and their primary caregivers on the caregiver burden, depressive symptoms, quality of life and anxiety levels of caregivers.
Setting and Design: We recruited DSM-IV TR diagnosed 100 schizophrenic inpatients that were being followed in Bakirkoy Research and Training Hospital for Psychiatry, Neurology and Neurosurgery and their primary caregivers from September 2009 to March 2010.
Materials and Methods: The patients' age ranged between 20 and 65 years. Patients and their primary caregivers have given informed consent. Positive and Negative Syndrome Scale (PANSS) was given to the patients and Sociodemographic and clinical data form , The Zarit Burden Interview, Beck Depression Inventory, State-Trait Anxiety Inventory, WHOQOL-Bref were given to the caregivers. For the patients who had a story of alcohol or substance use, drug urine analysis, MCV and GGT were recorded from medical files to aid to determine possible alcohol or substance use.
Available information about numbers and frequency of hospitalization, patient and family statements about alcohol and substance use was collected from current and past medical records of patients. The caregivers' age ranged between 23 and 68 years. The primary caregiver was the patient' s mother for 53% of the cases.
Results: We found severe caregiver burden for both patients with and without story of alcohol or substance abuse. For cases with alcohol or substance use we found highly significantly raised caregiver burden levels. Elevated levels of caregiver burden were significant for all dimensions of The Zarit Burden Interview.
We found that, caregiver burden had a highly significant positive correlation with positive psychotic subscale of PANSS.
Conclusions: In order to provide schizophrenic patients and their families optimum treatment and life conditions, we must consider caregivers' conditions and needs. As needs and difficulties of caregivers understood, there will be a good chance of providing them better life standards.
Key Words : Schizophrenia, Alcohol-Substance Use, Caregiver Burden

**NR4-103**

**EATING ATTITUDES, DEPRESSION AND ANXIETY LEVELS IN PATIENTS WITH HYPEREMESIS GRAVIDARUM HOSPITALIZED IN AN OBSTETRICS AND GYNECOLOGY CLINIC**

*Lead Author: Goksen Yuksel, M.D.*
*Co-Author(s): Ebru Erginbas, M.D., Can Ger, M.D., Ayca Ongel, M.D., Urun Ozer, M.D.*

**SUMMARY:**

Introduction: Nausea and vomiting may begin in the first trimester, about 4-10th gestational weeks, and these complaints may continue until the end of pregnancy. Hyperemesis gravidarum (HG) is a severe form of nausea and vomiting usually causing dehydration, malnutrition and weight loss at least 5% of total body weight. Recent researches showed that patients diagnosed with HG were demonstrated to have more psychi-

atric problems compared to healthy groups. Pregnant women with HG were found to have more psychiatric diagnosis as major depression, generalized anxiety disorders and personality disorders. In our study we aimed to investigate eating attitudes, depression and anxiety levels in a group of patients which were hospitalized due to HG in an obstetrics and gynecology clinic.
Material and Methods: We analysed the data of 51 HG patients hospitalized in the obstetrics and gynecology clinic of Okmeydanı Research and Training Hospital in Istanbul between October 2012-May 2013 and 41 pregnant women with no HG diagnosis who were admitted to obstetrics and gynecology outpatient clinic of the same center for routine observations in the first trimester of pregnancy. The data has been collected with sociodemographic questionnaire, eating attitudes questionnaire, Beck Depression Scale as well as Beck Anxiety Scale.
Results: Sociodemographic data of two groups has showed no statistical difference. To have a relative with a history of a psychiatric illness was found significantly higher in the HG group compared to control group (p=0.040). The average scores of Beck Depression and Anxiety Scales in HG group was statistically higher when compared with the control group (p<0.001). A statistically significant difference was found between eating attitudes of two groups (p=0.012).
Discussion: Although there was no significant difference in sociodemographic features between HG patients and control group in our study; the presence of a difference in eating attitudes of two groups, also higher depression and anxiety levels in HG patients should make the researchers in the field pay attention to the psychiatric link of HG.
Key Words: Anxiety, Depression, Eating Attitudes, Hyperemesis Gravidarum

**NR4-105**

**HEALTH-RELATED QUALITY OF LIFE IN PEOPLE WITH PROMINENT NEGATIVE SYMPTOMS: RESULTS FROM A MULTI-CENTER RANDOMISED PHASE II TRIAL ON BITOPERTIN**

*Lead Author: Diana Rofail, Ph.D.*
*Co-Author(s): Antoine Regnault, Ph.D., Stéphanie Le Scouillera, Carmen G Berardo Ph.D., Daniel Umbricht M.D., Ray Fitzpatrick M.A., Ph.D., F.Med.Sci.*

**SUMMARY:**

Introduction: Schizophrenia symptoms fall into three categories (positive, negative and cognitive symptoms) which probably impact differently patient's Health Related Quality of Life (HRQoL). HRQoL was assessed using the Schizophrenia Quality of Life Scale (SQLS) in a multicenter phase II trial investigating the safety and efficacy of bitopertin, a glycine transporter 1 inhibitor, in patients with prominent negative symptoms. The present study aimed to explore HRQoL as assessed by the SQLS in this trial.
Methods: 323 patients were randomized (1:1:1:1) to bitopertin 10, 30 or 60 mg orally once a day for 8 weeks, or to placebo. HRQoL was assessed using SQLS, symptoms severity using the Positive and Negative Syndrome Scale (PANSS), and functioning using the Personal and Social Performance scale (PSP). SQLS measurement properties including construct, clinical and cross-cultural validity, reliability, and responsiveness were assessed. Mean change in the two SQLS scores (Vitality/Cognition and Psychosocial feelings) between baseline and week 8 were compared between arms and a HRQoL responder analysis was conducted to aid the interpretation of this comparison. HRQoL response was defined using both anchor-based and distribution-based approaches. Relationships between HRQoL, symptoms and functioning at baseline were assessed using univariate linear regressions and path modeling.
Results: Both SQLS scores demonstrated good test-retest (ICC=0.77 and 0.74) and internal consistency reliability (Cronbach's α=0.86 and 0.93). Clinical validity with regards to overall schizophrenia severity and ability to detect change in overall severity of schizophrenia symptoms and of negative symptoms were also satisfactory. The two domain structure of the SQLS was not confirmed by the confirmatory factor analysis. No statistically significant difference was observed between treatment arms. However mean changes in SQLS scores were greater (in the direction towards improvement) and there were consistently more HRQoL responders in the bitopertin arms than in placebo. Negative symptoms were shown to be clearly associated with functioning and the Vitality domain of SQLS. Negative symptoms were also related to the Psychosocial feeling domain of the SQLS but only indirectly through functioning. Functioning and Anxiety/Depression were strongly related to both SQLS domains.
Conclusions: Overall SQLS measurement properties were supported in this sample, justifying its use in patients with prominent negative symptoms of schizophrenia. Whilst HRQoL comparison did not reach statistical significance, some signals were observed. In order to conclude on the potential benefit of bitopertin in terms of HRQoL, further research is needed (with appropriate power and length of follow-up). The impact of negative symptoms on functioning and HRQoL shown in our results implies that improvement in these symptoms should be targeted in this population of patients.
Study funded by Hoffmann- La Roche.

**NR4-106**

**THE EFFECT OF NEGATIVE SYMPTOMS ON HEALTHCARE RESOURCE USE AND CAREGIVER BURDEN AMONG PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Cedric O'Gorman, M.B.A., M.D.*
*Co-Author(s): Kathleen F. Villa, M.S., Edward A. Witt, Ph.D., Dave Pomerantz, Csilla Csoboth, M.D., Ph.D.*

**SUMMARY:**

Background:
Symptoms of schizophrenia (SCZ) can be categorized into "positive" and "negative" symptom domains. The overt nature of positive symptoms may make them appear more urgent targets of treatment but negative symptoms may be more closely associated with longterm functional impairment and are less well treated.
Purpose:
The purpose of this study is to examine the prevalence of negative symptoms in patients with SCZ and to examine the effect of negative symptoms on outcomes for patients and their caregivers.
Methods:
The study sample was drawn from the Schizophrenia Caregiver Survey (SCS; N = 504), which is a cross-sectional informal survey of caregivers of patients with SCZ collected between December 2007 and February 2008. Caregivers reported the frequency

of symptoms experienced by the patient on a 5 point Likert scale where 1 = "not at all" and 5 = "very frequently". Seven negative symptoms were identified (difficulty communicating; social isolation, withdrawal; self-neglect, poor appearance; slow, weakened movements and speech; lack of motivation; lack of interest in activities, work, school; lack of expression in speech). If the caregiver reported that the focal individual experienced the symptom "quite often" or "very frequently", that symptom was considered to be "present". Patients with 1 – 7 negative symptoms present were categorized into the "symptoms present" group (n = 317) while patients with no negative symptoms present were categorized into the "symptoms absent" group (n = 187).

Results:

Of the seven negative symptoms examined, the most common was "lack of motivation" (36.9%) and the least common was "slow, weakened movements and speech" (12.7%). Patients in the symptoms present group had significantly lower Mental Health summary scores and Physical Health summary scores (both $p < .001$) relative to the symptoms absent group (measured by the SF-8). Patients in the symptoms present group also reported significantly fewer hours spent in paid employment during a typical week ($p = .004$) and more emergency room visits due to mental health reasons ($p < .001$) than those in the symptoms absent group. Caregivers of symptoms present individuals reported more time spent caregiving ($p < .001$) and more difficulty providing care within the past week ($p < .001$) than caregivers of patients in the symptoms absent group as measured by the Oberst caregiving scale. Finally, caregivers of patients in the symptoms present group were significantly more likely to report stress-related comorbidities.

Discussion:

The results of this study suggest that negative symptoms are relatively common in patients with SCZ and that they not only affect the focal individual but significantly increase the time and difficulty of caregiving as well as increase stress-related comorbidities for caregivers.

**NR4-108**

**CORRELATION BETWEEN WOMEN'S RIGHT STATUS, IMPROVED ACCESS TO INFORMATION, FREEDOM OF EXPRESSION AND SUICIDE IN AFGHAN WOMEN**

*Lead Author: Najeeb Ur Rahman Manalai, M.A., M.D.*
*Co-Author(s): Mohammad Ayan Ghairatmal, M.D., Pir Mohammad, M.D., Partam Manalai, M.D.*

**SUMMARY:**

Introduction: Women and their well-being have been underrepresented in Afghan culture throughout the recorded history. Violation of women's basic human rights has plagued the society. It was anticipated that with the international intervention, the living condition for Afghan women would improve and, as a measure of healthier society, suicide rate in women would fall. However, the suicide rate has increased on the contrary. Identification of trends and correlates in regard to increased suicide rate, therefore, is of paramount public health importance. In the current study, we examine the post-war improvement in living conditions and increased suicide rate in Afghan women. Methods: We searched the internet for literature on historical trends in suicide in Afghanistan. Results: A ten-year survey of available suicide data in pre-war Afghanistan was indicative of Afghanistan being among countries with the lowest global rate in suicide (0.25/100,000). Unfortunately, the trend has been increasingly disturbing. Although accurate statistics are unavailable, the scant research indicates that in clinical population, suicidal ideation range from 40% – 90%. Since there were 2300 - 2500 female suicide in a year recently, and considering that the majority of these suicides were records in three progressive provinces in Afghanistan; thus at least in those provinces the women's suicide rate could be as high as 90/100,000 (16.5 /100,000 women for the country) putting female suicide rate in Afghanistan at or above a level observed in Western Europe. Conclusion: Self-immolation and suicide are challenging cases to study in Afghanistan. The women's human rights have improved minimally but are considerably better than women's human rights during Taliban or Mujahideen (1991-2001); yet the suicide rate has increased. The higher rates of females losing their live to suicide in progressive provinces of Afghanistan are alarming. A question arises: does knowledge of "freedom of choice" in the developed countries makes living condition less tolerable for women in progressive provinces in Afghanistan? The authors suggest two answers: 1. By committing suicide, Afghan women have learneda powerful mean to send their massage to the world about a need for change in their miserable life conditions 2. The media cover more cases and copy-cat suicides ensue. Conclusion: More systematic research is needed to identify suicide risk and protective factors. Simple measures such as educating primary care provider about common psychiatric disorders and free-of-charge suicide hotline (most Afghan women in progressive provinces have access to cellular phones) may reduce this horrific increase in suicide rate in Afghan women.

**NR4-109**

**BASELINE DATA OF THE MOSAIC U.S. SCHIZOPHRENIA REGISTRY: PARTICIPANTS CHARACTERISTICS**

*Lead Author: Henry A. Nasrallah, M.D.*
*Co-Author(s): Csilla T. Csoboth, M.D., Ph.D., Daniel Casey, M.D., Philip D. Harvey, Ph.D., James I. Hudson, M.D., Keith H. Nuechterlein, M.D., Tracey G. Skale, M.D., Lonnie R. Snowden, Ph.D., Rajiv Tandon, M.D., Cenk Tek, M.D., Dawn Velligan, Ph.D., Sophia Vinagradov, M.D., Cedric O'Gorman, M.D., Joan Jacobs, Ellen Lentz, Ph.D., Nirali Shah, Janice Tran, Diana O. Perkins, M.D.*

**SUMMARY:**

Introduction: The Management of Schizophrenia in Clinical Practice (MOSAIC) registry, a disease-based 5-year registry of schizophrenia (SCZ), was initiated in 2012 to address important gaps in our understanding of key symptom domains and standard of care in SCZ. The objectives of the registry are to describe (1) the course of disease for up to 5 years, (2) the patterns of treatment in various healthcare settings at all stages of illness, and (3) the burden of disease on the patient, caregiver, and provider.

Hypothesis: Initial baseline data for the first 161 enrolled participants of a targeted sample size 2500 will illustrate the sample.

Methods: Participants are being recruited from a network of Patient Assessment Centers formed to support proximal care sites. Broad entry criteria include patients ≥18 years of age, English- speaking, and a diagnosis of schizophreniform, SCZ, or

schizoaffective disorder.
Results: By July 31, 2013, 161 participants (74.5% male), with a mean age of 40.3 years (SD, 12.89) were enrolled. 68.3% are White, 24.2% are African American/Black and 18.0% are Hispanic. 25.5% are overweight (25≤BMI<30), and 53.4% are obese (BMI≥30). 77% of participants are single and 20.5% have children. Regarding educational level, 42.9% have attended some college and an additional 25.5% finished high school. >40% are employed. 71.4% report living in a private home and 23.6% live in a supervised group home. 42% have a key informant/caregiver, almost 60% of whom are parents. A majority of participants have a diagnosis of SCZ (78.9%) with a mean illness duration of 14.7 years (SD, 11.15). The remainder have a diagnosis of schizophreniform (19.4%) or schizoaffective disorder (1.9%). Participants are categorized by baseline overall CGI-SCH Severity Score as minimally (9.4%), mildly (29.4%), moderately (36.3%), or markedly (23.8%) ill. Mean (SD) baseline total PANSS score is 68.4 (17.42), with mean (SD) scores of 16.3 (5.37), 18.4 (6.00), and 33.7 (9.24) on the Positive Symptom, Negative Symptom, and Psychopathology Subscales, respectively. Upon enrollment, 96.9% of participants were taking antipsychotics (APs), of whom 21% were taking first-generation APs. Common comorbidities were hypercholesterolemia (32.3 %), hypertension (17.4 %), type II diabetes (13%), and COPD/asthma (11.8 %).
Conclusions: To our knowledge, no large-scale patient registry has been conducted in the US to longitudinally follow patients with SCZ and describe symptom attributes, support network, care access, and disease burden. The MOSAIC registry compliments a European-based registry (PATTERN) with similar objectives. These preliminary baseline data characterize the first 161 participants in the MOSAIC registry. As recruitment progresses, the data are expected to provide important epidemiological, clinical, and outcome insights into the disease course and burden of SCZ in the US.

**NR4-110**
**UTILIZING MASS MEDIA FOR MENTAL HEALTH AWARENESS AND EARLY INTERVENTION'**
*Lead Author: Avdesh Sharma, D.P.M., M.D.*
*Co-Author(s): Dr. Sujatha Sharma, Ms. Manasi Sharma*

**SUMMARY:**
Mental health and illnesses are a problem worldwide but each culture differs in its perception of the problem. Similarly, the available infrastructure and facilities for treatment and rehabilitation may vary widely within a country, especially in India with its diverse cultures, socio economic status and systems of medicine apart from socio cultural background. Yet, there are many similarities in the Asian part of the world, specially SAARC region.
The media response to the challenge of awareness about mental health and illnesses must encompass local informal means of mass communication (word of mouth; opinion of leaders and doctors; folklore; street plays etc.) to tools of information technology at small level (local newspapers, magazines and radio; cable operators etc.) to National and International level (National News papers; National channels of Radio and Television; Satellite channels; Internet etc.). Each of these medias serves a purpose as well as target populations and is a piece in the larger picture of successfully integrating awareness, treatment and rehabilitation in a stigma free society.
Mental health now is in news and psychiatrists are being called upon to interact with the media (As a group, mental health professionals are most sought after and quoted). Handling Mass-Media is an art and we all need to utilize the tools available to us to bring about awareness in the population to go beyond treatment as well as to foster treatment and demystify myths. The need is to be proactive and look for ways and opportunities to create awareness. It requires communication skills as well as understanding various medias to be able to harness them. The poster would focus on hands on experience/practical aspects of handling the mass media to benefit largest section of the population in a sustained manner for mental health awareness and early intervention based on the experience of presenters in television series on Mental Health, 'Mann Ki Baat' and 'Mind Watch'.
'MANN KI BAAT (Matters of the Mind)' – Doordarshan, National Television Channel in India with potential viewership of about 800 million and Presenters (Dr. Avdesh Sharma, Dr. Sujatha Sharma & Manasi Sharma) have produced a 78 part series entitled 'MANN KI BAAT' which has been telecast twice/week from 21st July, 2010 onwards. It deals with mental health issues and psychiatric illnesses in a studio discussion format with live stories and computer graphics. The experience with dedicated website www.mannkibaat.com and experience of being put on youtube would be shared.
'MINDWATCH' in 1995-1996 onwards, a 26 episode non-fiction serial on mental health in English of 25 minutes each. The series has (2010-2011) been archived, digitalized, dubbed in eight languages and retelecast as an important social service program by Doordarshan Archives. The DVD sets in eight languages – English, Hindi, Tamil, Malyalam, Gujrati, Bangla & Oriya is available to general public and NGO's.

**NR4-111**
**DISTURBED EATING BEHAVIORS AND EATING DISORDERS AMONG CHILDREN AND ADOLESCENTS DIAGNOSED WITH DIABETES TYPE I**
*Lead Author: Denise Claudino, M.D.*
*Co-Author(s): Mireille Almeida, M.D.; Angélica Claudino, M.D., Ph.D; Ruth Grigolon, B.A.; Nara Mendes, B.A., M.A; Wagner Ribeiro, PhD.; Angela Spinola, M.D., PhD.*

**SUMMARY:**
Objective: Abnormal eating behaviors are relatively common in children and adolescents diagnosed with type-1 diabetes. Food restriction and excessive preoccupation with weight are often associated with diabetes treatment and play an important role in the etiopathogenesis of eating disorders (ED). The purpose of this study was to assess eating behavior among children and adolescents diagnosed with type-1 diabetes.
Method: 124 patients (54% females and 46% males) between 8 and 16 years old (mean age 13,10 ± 2,4) who attended outpatient pediatric endocrinology clinics were invited and accepted to participate in the research study. Written informed consent was obtained from participants and their parents. Assessment of their eating behaviors and ED diagnosis was performed using the Development and Well-Being Assessment (DAWBA) interview and the Children Eating Disorders Examination (ChEDE). Symptoms related to depression, self-esteem and body image were investigated using the Childhood Depression Inventory

(CDI) and the Body Image Questionnaire (BSQ). Anthropometric parameters and glycosylated hemoglobin were measured. Mann-Whitney tests were used to compare continuous measures and Pearson Chi-Square for categorical measures.
Results: The majority (63.7%) of participants were within the normal weight range; however, 63.9% had abnormal glycosylated hemoglobin levels (9.83 ± 2.7). Importantly, 29.7% of participants demonstrated significant symptoms of depression per the CDI (scored ≥16). Student t test was used to compare the male and the female groups: 13% of the female participants demonstrated body dissatisfaction (scores > 110) on the BSQ, which was significantly different from the male group (p = 0.01). Based on the DAWBA interview, 10.5% of female participants met diagnosis for an ED, as opposed to none of the male participants (p = 0.01). In addition, the ChEDE body weight concern subscale scores were different between genders (p = 0.02), although considered within limits found in general population. Furthermore, 32% of the females and 23% of male participants met criteria for Disturbed Eating Behavior (DEB) – described as presence of at least one ED symptom and those presenting DEB showed higher depressive symptoms (45.2%) than those without DEB (21.3%) ( p = 0.02).
Conclusion: Significant eating disturbances are prevalent in this population of children and adolescents diagnosed with type-1 diabetes and ED rates are higher than commonly found in girls. Females have also a higher prevalence of ED and DEB compared to males. A large number of participants have significant depressive symptoms, particularly those with high risk for ED. Our findings suggest a need for screening for ED symptoms in this population, as well as appropriate intervention considering its potential impact in treatment.

**NR4-112**

**A COLLAGEN CONDITION IS A STRONG LINK BETWEEN AUTONOMIC DYSFUNCTION, SOMATIC, AND PSYCHOPATHOLOGIC CONDITIONS**

*Lead Author: Antonio Bulbena, M.D., M.Sc., Ph.D.*
*Co-Author(s): Guillem Pailhez MD., PhD., Andrea Bulbena-Cabré MD, MSc, Anna Cabrera MD, Carolina Baeza-Velasco PhD, Judith Reche, PhD, Stephen Porges Ph.D*

**SUMMARY:**
Objectives: To evaluate joint hypermobility in a sample of students aged between 15 and 18 years, in relation to 1) frequency of being regularly visited by a psychiatrist/psychologist, 2) level of awareness of body processes and reactivity of the autonomic nervous system, and 3) frequency of autonomic-related illnesses.
Method: A Cross-sectional study was conducted in a Secondary School in Barcelona, Spain. The sample consisted of 117 subjects (33 males and 84 females), who willingly filled a sociodemographic questionnaire (including visits to Psychiatrist/Psychologist), the Self-reported Screening Questionnaire for Collagen condition and Hypermobility's assessment (SQ-CH) and the Spanish version of the Body Perception Questionnaire (BPQ), which includes systematic assessment of several conditions. Student's t and Chi squared tests were used to assess rates, proportions and comparisons according to the presence of the collagen condition.
Results: Joint hypermobility was found in 33.3% of the subjects. Those who were regularly visited by a psychiatrist/psychologist (27.4%) were found to be more hypermobile [50% vs. 27.1%; chi=4.52; p=.033]. Hypermobile subjects had higher scores on each BPQ subscale [awareness: t=2.5, p=.012; stress response: t=2.8, p=. 007; reactivity: t=2.6, p=.01] and greater frequency of reported experience of hopeless/unhappiness [72.7% vs. 24.2%; chi=18.9; p<. 001], clinical depression [77.8% vs. 25.3%; chi=18.9; p<. 001], bulimia [75% vs. 30.3%; chi=6.71; p=.016], anorexia [80% vs. 31.2%; chi=5.12; p=.042], eczema [70% vs. 29.9%; chi=6.6; p=. 015], anxiety disorders [83.3% vs. 27.6%; chi=15.04; p<.001], and severe menstrual cramps [51.2% vs. 27.9%; chi=5.72; p=.022].
Conclusion: Results show that mental disorders (particularly anxiety disorders) and autonomic dysfunction are more prevalent in subject with hypermobile joints and is consistent with previous research findings. These subjects tend to suffer from a particular cluster of mental and somatic disorders that share some common abnormalities both in the autonomic nervous system and in the collagen structure as found in joint hypermobility. This may be a diathesis not yet identified, but worthy to investigate.

**NR4-113**

**HOW TO FACE© SIBLING CONFLICT: ADOLESCENTS' COGNITIVE AND EMOTIONAL PERCEPTIONS OF THEIR SIBLING RELATIONSHIPS**

*Lead Author: Smadar Celestin-Westreich, Ph.D.*
*Co-Author(s): Leon-Patrice Celestin, M.D., Hospital Practitioner, Paris, Centre F.A.C..E. & University of Brussels, Hospital Erasmus Le Lothier*

**SUMMARY:**
Background: Although sibling conflict is reported to be the most common form of family violence it remains understudied empirically, which leaves a need to clarify its prevalence and impacting factors as well as its implications for practice.
Aims: To advance, drawing on the FACE©-model, the evidence-base regarding deleterious sources of stress in the family context and to facilitate youths' and parents' reciprocal adjustments of cognition, emotion and behavior, in order to transform developmental and relational challenges into individual and familial resources.
Methods: As part of the FACE©-SIB program (Facilitating Adjustment of Cognition and Emotion - Siblings), we recently investigated 600 adolescents (ages 12 to 18) on their cognitive-emotional sibling experiences on a micro-level, and on structural and functional family characteristics on a macro-level. More specifically, youth reported on the quality of their sibling relationship (Sibling Relation Questionnaire & further in-depth qualitative probing), on their experiences of cyber sibling harassment (adapted Cyber Harassment Questionnaire), as well as on their problem behavior (Strengths and Difficulties Questionnaire) and experienced family climate (Family Environment Scale), besides demographic and structural family characteristics.
**Results:** On a micro-level, one third of the adolescents overall report weekly verbal conflicts, while one fourth of them experiences repeated daily disputes with verbal violence. Although physical fights decrease with increasing age, one out of five youngsters aged between 12 and 14 years report daily to weekly physical fights with siblings, especially among boys and families with more than two children. Approximately 16%

of adolescents currently also experience cyber harassment in their sibling relationships. Furthermore, while two third of the adolescents simultaneously do globally qualify their sibling relationship as 'friendly', deeper probing also reveals one third of them to experience little emotional support and personal agreement with their siblings. On a macro-level, the family climate significantly impacts the sibling relationship throughout adolescence. Adolescents who report their families to be less conflict-ridden and carrying more warmth and positive emotional expression, also experience less conflict in their sibling relationships. Finally, adolescents seem to struggle with finding satisfying solutions for their sibling conflicts as they varyingly attempt to ignore them, leave them alone for some time or expect parental intervention.
Conclusions: The significant reported proportions of frequent and persistent sibling conflict by adolescents call for parental awareness and for guidance to prevent adverse developmental risks. The FACE©-SIB program consequently applies a structured intervention of emotion regulation and problem solving strategies aimed at promoting siblings' constructive conflict resolution competencies.

**NR4-114**
**EVALUATION OF METABOLIC SYNDROME AND SEXUAL DYSFUNCTION IN PATIENTS WITH BIPOLAR DISORDER**
*Lead Author: Ayca Can, M.D.*
*Co-Author(s): Nesrin Tomruk M.D., Nihat Alpay M.D.*

**SUMMARY:**
Objectives: This is the first study in bipolar patients, aimed to evaluate possible relationship between metabolic syndrome (MetS) and its components with sexual dysfunction (SD). Secondary objective is the evaluation of possible association between sexual dysfunction with CRP levels and 10 year cardiovascular risk (CVR) scores in bipolar patients. Methods: 128 patients with bipolar disorder (BPD), diagnosed by Structured Clinical Interview for DSM-Axis I Disorders, were assessed cross-sectional for MetS based on the Society of Endocrinology and Metabolism of Turkey (TEMD) criteria. Euthymia was confirmed by the Young-Mania Rating Scale and the Hamilton Depression Rating Scale. Sexual Function was assessed by the Arizona Sexual Experience Scale (ASEX). Patients were divided into two groups as patients with MetS and patients without MetS as control group. Results: 45.3% of the patients were MetS according to TEMD, a prevalence rate higher than previous studies in patients with BPD. Almost half of the patients were confirmed to have SD. There was no difference in frequencies of SD between women who had MS and who did not. However women with MetS scored significantly higher on the ASEX. Compared with the control group, men with MetS had higher frequency of SD and higher mean erectile function score. There was an increase in erectile function score as the number of components of the MetS increased. It was found that CVR score in ten years was increased 2 fold in men with SD compared to controls. CRP levels and SD were found not to be related. Abdominal obesity and smoking were statistically significant predictors of SD. Conclusion: The prevalence of the MetS in patients with BPO is alarmingly high and sexual functions deteriorate with MetS in both sexes. Because CVR increases with SD, it should be noted that SD may be a marker in symptom-free coronary artery disease. Clinicians should be aware of this issue and appropriately monitor patients with BPD for MetS and SD as a part of the care for these patients. Further studies are needed to clarify the exact relationship between SD and MetS in bipolar patients.

AMERICAN PSYCHIATRIC ASSOCIATION

167th Annual Meeting, New York, NY

# NEW RESEARCH ABSTRACTS

CHANGING THE PRACTICE AND PERCEPTION OF PSYCHIATRY

**MAY 05, 2014**
**NEW RESEARCH YOUNG INVESTIGATOR POSTER SESSION 1**

**NR5-1**
**CASE SERIES: PRAZOSIN FOR NIGHTMARES IN PATIENTS WITH EATING DISORDERS**
*Lead Author: Padmapriya Musunuri, M.D.*
*Co-Author(s): Gibson George, MD, Richard Jaffe, MD*

**SUMMARY:**
Introduction
Prazosin is a centrally active alpha-1 adrenergic receptor antagonist, traditionally used to treat hypertension and benign prostatic hyperplasia. It has been found in placebo-controlled studies to reduce trauma nightmares and overall severity of symptoms in patients with combat and civilian related post traumatic stress disorder (PTSD). Several studies have shown a high comorbidity between eating disorders and PTSD and about 60% of patients with eating disorder have experienced at least one trauma in their life. Prazosin for nightmares has not been studied in eating disorder sub-group of populations, who have an increased risk of side effects due to increased risk of electrolyte disturbances and hemodynamic compromise. In this case series, we present series of 4 women diagnosed with eating disorder with distressing nightmares who were treated successfully with prazosin.
Method
We conducted a retrospective chart review of patients who were started on prazosin for nightmares on the eating disorder unit. Four patients with diagnosis of eating disorder and history of trauma were selected and these charts were reviewed in detail for co-morbid axis 1 diagnosis, past psychiatric history, social history and progress on the unit while on prazosin.
Discussion
Although there have been no studies about use of prazosin in patients with eating disorders, this case series illustrates that prazosin appears to be effective in treating trauma nightmares in these patients. Though orthostatic hypotension has been reported with prazosin, eating disorder patients appear to be more susceptible, as three out of our four cases presented with this event. This series also suggests that sexual trauma is more common in patients with eating disorder, as three of our four cases had sexually related trauma that manifested as nightmares. The intensity of the nightmares was independent of the nature of the trauma or intensity of the eating disorder and mood symptoms. All patients reported reduction in nightmares within two weeks of therapy. The limitations of this case series were that there were no men included, there were no patients with the diagnosis of bulimia and none of the patients had any major medical co-morbidities. More research is warranted in this area given the increased prevalence of trauma and nightmares in this population.

**NR5- 2**
**A 30-YEAR OLD FEMALE WITH MOYAMOYA DISEASE WITH ASSOCIATED DEPRESSION**
*Lead Author: Muhammad Puri, M.D., M.P.H.*
*Co-Author(s): Deepti Mughal, MD, Kalliopi-Stamatina Nissirios, MS*

**SUMMARY:**
We report a case of a 30 year old Caucasian female who was admitted voluntarily in our hospital with a chief complain of depression and status post suicidal thoughts with onset of two weeks. From a review of the patient's medical records a history of Moyamoya Disease since 2002 has been noted. Moyamoya Disease is a rare progressive syndrome of cerebral occlusions and transient ischemic attacks. The patient reported that her disease has been managed with two neurosurgeries and with appropriate medication. The patient was admitted to our clinic for management and treatment of her depressive symptoms. The purpose of this case report is to establish a causative relationship between Moyamoya disease and depression and to discuss the importance of further research on the neuropsychological sequelae of MMD.

**NR5-3**
**33 YEAR OLD MALE WITH AGGRESSIVE BEHAVIOR AND HOSTILITY DURING TREATMENT WITH LEVETIRACETAM WITH SEIZURE DISORDER**
*Lead Author: Muhammad Puri, M.D., M.P.H.*
*Co-Author(s): Deepti Mughal, MD, Kalliopi-Stamatina Nissirios, MS*

**SUMMARY:**
We report a case of a 33 year old African American male who presented in our Emergency Department after an altercation with his mother. The patient's mother insisted on admitting the patient in our psychiatric unit, as she was very concerned because the patient had endorsed homicidal thoughts the past week. From a review of the patient's medical records a history of a seizure disorder since 1998 is noted, as well a history of intellectual disabilities since birth, and a a traumatic brain injury at 2 year of age. The patient's mother feels overwhelmed and she reports that changes in the patient's behavior have been apparent for nearly a year, which corresponds with the time the patient was started on Levetiracetam treatment by his neurologist, for management of his seizure disorder
The purpose of this case report is to establish a side effect of new onset or worsening aggression and hostility while on treatment with Levetiracetam for seizure disorder.

**NR5- 4**
**FOOD INSECURITY AMONG INDIVIDUALS WITH SERIOUS MENTAL ILLNESSES BEING TREATED IN COMMUNITY MENTAL HEALTH AGENCIES**
*Lead Author: Yazeed S. Alolayan, M.B.B.S.*
*Co-Author(s): Beth Broussard, MPH, CHES, Michael T. Compton, MD, MPH, Anthony Crisafio, BA, Thomas Reed, BA*

**SUMMARY:**
Introduction
Food security, or having sufficient access to healthy food, is crucially important for physical and mental health. Food insecurity, typically linked with constrained financial resources, has been associated with anxiety, depression, and other mental illnesses. Food insecurity has been defined as a condition where an individual or household is uncertain in the ability to obtain sufficient quantities or quality of safe and nutritious food and therefore there is a decrease in the consumption of needed food to grow normally and have an active and healthy life (FAO ,1996). Moreover, in 2006, the United States Department of

Agriculture (USDA) introduced a new classification system of food security with four levels: high food security, marginal food security, low food security, and very low food security. Little is known about food insecurity among individuals with serious mental illnesses. The purpose of this study was to estimate the prevalence of food insecurity among individuals with serious mental illnesses being treated in community mental health agencies in Washington, D.C.
Methods
This study used data from 300 individuals recruited from five Washington, D.C.-based core service agencies (CSAs), which are community mental health agencies. The assessment consisted of a number of rating scales, as well as the USDA's Food Security Survey (FSS). Data from the FSS were analyzed using the Rasch model in order to assess the performance of the measure in this sample as compared to its use in U.S. nationally representative surveys.
Results
Among 300 adults with a psychotic or mood disorder, 206 (68.9%) reported food insecurity, which is in sharp contrast to 14.5% of American households and 12.0% of households in the Washington, D.C. general population. Furthermore, 46.8% had very low food security, compared to 5.7% in the U.S. Rasch analysis suggested good reliability of the FSS in our sample.
Discussion
The prevalence of food insecurity is high in individuals with mental illnesses. These findings suggest the need for community-based programs aimed at strengthening food security for this population. Clinicians interested in screening for food insecurity can consider using one of several brief (1- or 2-item) screening instruments. Further research is warranted on the problem of food insecurity among individuals with serious mental illnesses.

**NR5-5**

**EMOTION RECOGNITION DEFICIT AND EMOTIONAL RESPONSES TO AFFECTIVE PICTURES IN PATIENTS WITH SINGEL RIGHT HEMISPHERE DAMAGE**

*Lead Author: Sonia Alvarez-Fernandez, M.Sc.*
*Co-Author(s): Maria Serrano-Villar, M.Sc., Patricia Simal, M.D., Alvaro Ruiz-Rodriguez, M.Sc., Jose A. Suarez-Meneses, M.D., Samuel Romero, M.D., Guillermo Lahera-Forteza, M.D., Ph.D.*

**SUMMARY:**
Right hemisphere damage (RHD) has been linked to Facial Emotion Recognition (FER) deficit, though studies present limitations. Emotional processing findings show no differences between patients and controls in affective valence ratings of emotional pictures (Sanchez-Navarro, 2005). Others show a significant difference in unpleasant pictures and a distinct skin conductance response (SCR) (De Sousa, 2010). Few studies about single RHD have been published. Objectives: Comparing FER skills, and SCR and valence ratings during emotional pictures processing, in single RHD patients to a control group. Aims: Identifying FER patterns and analyzing differences according to type of emotion. Examining emotional processing, both physiologically and subjectively. Checking a possible relation between FER and emotional processing. Method: 46 patients with a single RHD (mean age 68.93;SD=12.62. 52% males), treated in Hospital Clinico S. Carlos Stroke Unit (Spain), were assessed after 3-12 months from stroke. 46 control subjects (67.28;SD=18.29. 50% males) were assessed. Participants were evaluated in sociodemographic and clinical variables through a clinical interview, as well as the Mini-mental State Examination and Hamilton Depression Rating Scale. 59 pictures from Pictures of Facial Affect (POFA) collection (Ekman, 1993) were shown to the sample, which identified them according to the type of emotion (i.e. happiness, fear, surprise, sadness, disgust, anger). 54 pictures from International Affective Picture System (IAPS) (Lang, 1999) were shown to the subjects, while SCR was measured. As well, the sample rated the valence of each picture among 3 categories (pleasant, neutral, unpleasant) in a 1-9 scores Likert scale. Results: Both samples showed significant differences in FER (T=-2.751;p=0.007). Lowest performance was obtained in identifying fear (mean correct answers 0.45;SD=0.25) and anger (0.48;SD=0.30) in total sample. RHD patients showed a deficit in FER skill compared to controls. Significant differences were found in recognizing anger (T=-2.043;p=0.044), disgust (T=-2.059;p=.042), happiness (T=-2.371;p=0.020), and sadness (T=-2.633;p=0.010). As some previous research, no differences were found in affective valence rating between RHD patients and control subjects. Both samples rated unpleasant pictures as less pleasant than neutral ones, and pleasant pictures as more pleasant than neutral ones. As well, neither SCR significant differences were found between both groups. Conclusions: Results suggest a relationship between RH and FER. Therefore, a RH involvement in anger, disgust, happiness and sadness recognition. Our data showed no association between RHD and emotional processing based in affective pictures, both subjectively and physiologically. Hence, emotion recognition and emotion processing could be suggested being independent cognitive processes. Despite these findings, more research is needed, as inconsistent results can be found in literature.

**NR5-6**

**ELECTROCONVULSIVE (ECT) THERAPY IMPROVES MAJOR DEPRESSION MORE THAN PHARMACOLOGICAL THERAPY ALONE: A NATURALISTIC APPROACH**

*Lead Author: Lucas Primo de Carvalho Alves*
*Co-Author(s): Lucas P. Alves, Thiago V. Freire, M.D., Marcelo A. Fleck, M.D., Ph.D., Neusa S. Rocha, M.D., Ph.D*

**SUMMARY:**
Introduction: Several meta-analysis have proven the efficacy ECT for depressive disorders. However, it is a challenge to transfer these results to real life patients with medical and psychiatric comorbidities. Evaluating the outcomes of naturalistically ECT treated depressed inpatients might be beneficial in terms of effectiveness.
Objective: To evaluate the outcomes of ECT in a cohort of psychiatric depressed inpatients.
Methods: All depressed adults (>18 years) according to Mini International Neuropsychiatry Interview (MINI) admitted to a psychiatric unit were enrolled. We divided our cohort into 2 groups: ECT treated and non- ECT treated. Main outcomes were: depression improvement (difference of Hamilton Rating Scale for Depression (HAM-D) score between admission and discharge); response (HAM-D improvement ≥50%); remission (HAM-D score ≤7); time of hospitalization (a corrected time for the ECT group was also calculated by difference of days between the discharge and the admission including only ECT treatment). Potential confounders of baseline were controlled

using HAM-D improvement as dependent variable.
Results: 147 patients were included in the study, 43 in the ECT group and 104 in the non-ECT group. Mean HAM-D score differed statistically in the admission between groups, being 26.05 (IC±1.03) in the ECT group and 21.61 (IC±0.69) in the non-ECT group (p=0.001). In the discharge, there was no difference in HAM-D scores between groups: 7.70 (IC±0.81) in the ECT group and 7.40 (IC±0.51) in the non-ECT group (p=0.75). Comparing HAM-D improvement, ECT group has diminished HAM-D score by a mean of 18.34 points (IC±1.18) and non-ECT group 14.20 (IC±0.76) (p=0.004, between groups). Response rates was 84.6% in the ECT group and 75.5% in the non-ECT group (p=0.35). Remission was 58.1% in the ECT group and 58.7% in the not-ECT group (p>0.999). No potential confounders (age, sex, ethnicity, previous ECT, menopause and number of previous hospitalizations) had a statistically significant difference. Mean time of hospitalization was 35.48 (IC±2.48) days on the ECT group and 24.57 (IC±1.50) days on the non-ECT group (p<0.001). Corrected time of hospitalization was 27.66 (IC±1.95) in ECT group (p=0.25, between groups).
Discussion: Patients ECT treated had a greater HAM-D score than patients non-ECT treat, which is consistent with the formal indication of ECT for patients that have refractoriness of the symptoms, suicide risk, etc. Both groups had almost the same HAM-D score in the discharge (around 7,5), reinforcing the efficacy and effectiveness of ECT for severely depressed patients, showing even better response rates for ECT group. The longer mean time of hospitalization in ECT group than in non-ECT group points to the need to know in advance clinical predictors of ECT response. This will diminish the gap between the admission and the first ECT session for patients for whom ECT is going to be clearly beneficial.

**NR5- 7**

**RISK OF UPPER GI BLEEDING WITH SSRIS WITH OR WITHOUT CONCURRENT NSAID USE: A SYSTEMATIC REVIEW AND META-ANALYSIS**

*Lead Author: Rebecca Anglin, M.D., Ph.D.*
*Co-Author(s): Yuhong Yuan, Ph.D., Paul Moayyedi, M.B., Ch.B., Ph.D., Frances Tse, M.D., David Armstrong, M.B., B.Chir., Grigorios I. Leontiadis, M.D., Ph.D.*

**SUMMARY:**

Background: There is emerging concern that selective serotonin reuptake inhibitors (SSRIs) may be associated with an increased risk of upper gastrointestinal bleeding, and that this risk may be further increased by concurrent use of non-steroidal anti-inflammatory (NSAID) medications. Previous reviews of a relatively small number of studies have reported a substantial risk of upper gastrointestinal bleeding with SSRIs, however more recent studies have produced conflicting results.
Objective: To obtain a more precise estimate of the risk of upper gastrointestinal bleeding with SSRIs, with or without concurrent NSAID use.
Data Sources: MEDLINE, EMBASE, PsycINFO, the Cochrane central register of controlled trials (through April 2013) and US and European conference proceedings
Study Selection: Controlled trials, cohort, case-control and cross-sectional studies that reported the incidence of upper gastrointestinal bleeding in adults on SSRIs with or without concurrent NSAID use, compared to placebo or no treatment.
Data Extraction and Synthesis: Data was extracted independently by two authors. Dichotomous data were pooled to obtain odds ratio (OR) of the risk of upper gastrointestinal bleeding with SSRIs +/- NSAID, with a 95% confidence interval (CI).
Main Outcome and Measure: The risk of upper gastrointestinal bleeding with SSRIs compared to placebo or no treatment.
Results: 15 case-control studies (including 393,268 participants) and 4 cohort studies were included in the analysis. There was an increased risk of upper gastrointestinal bleeding with SSRI medications in the case-control studies (OR 1.66, 95% CI 1.44,1.92) and cohort studies (OR 1.68, 95% CI 1.13,2.50). The number needed to harm for upper gastrointestinal bleeding with SSRI treatment in a low-risk population was 3177, and in a high-risk population was 881. The risk of upper gastrointestinal bleeding was further increased with the use of both SSRI and NSAID mediations (OR 4.25, 95% CI 2.82,6.42).
Conclusions and Relevance: SSRI medications are associated with a modest increase in the risk of upper gastrointestinal bleeding, which is lower than previously estimated. This risk is significantly elevated when SSRI medications are used in combination with NSAIDs, and physicians prescribing these medications together should exercise caution and discuss this risk with patients.

**NR5- 8**

**BODY CONTOURING SURGERY AFTER BARIATRIC SURGERY: A STUDY OF COST AS A BARRIER AND IMPACT ON PSYCHOLOGICAL WELL-BEING**

Lead Author: Arash Azin, B.Sc.
*Co-Author(s): Arash Azin, B.Sc., Stephanie E. Cassin, Ph.D., C.Psych., Raed Hawa, M.D., FRCPC.*
*Timothy Jackson, M.D., MPH, FRCSC., Sanjeev Sockalingam, M.D., FRCPC., Carrol Zhou, B.Sc.*

**SUMMARY:**

Abstract
Background: Obesity, which impacts one in three American adults is a public health concern in North America. Bariatric surgery is considered the most effective long-term treatment for severe obesity, resulting in sustainable weight loss and improvements in obesity-related comorbidities and psychological distress. However, after the initial rapid weight loss, up to 96% of patients develop excess sagging skin folds. Body-contouring surgery (BCS) can be a solution to excess skin folds post bariatric surgery. Many patients desire BCS, but cost of the procedure may be a limiting factor. This study aims to examine barriers to accessing BCS, and to compare socioeconomic variables (e.g., income, education, employment) and psychological variables (e.g. quality of life [QOL], and psychological distress) between bariatric surgery patients who have received BCS and those who have not.
Methods: In this cross-sectional study, a questionnaire packet was administered to i) patients who received bariatric surgery but not BCS (BS); and ii) patients who received both bariatric surgery and BCS (BS/BCS). The questionnaire included perceived barriers to BCS, socioeconomic barriers, measures of anxiety (Generalized Anxiety Disorder 7-item [GAD-7]), depression (Patient Health Questionnaire 9-item [PHQ-9]), and QOL (SF-36). Data was analyzed using SPSS version 21.0. Comparison tests were conducted using chi-square or Fisher's exact test for categorical data, and either independent samples t-test or

Mann-Whitney U test for continuous data depending on data normality. Statistical significance was set at a p-value of <0.05. Results: Amongst the 58 patients participating in the study, 93.1% of patients reported having excess skin folds. Of this sample 95.4% desired BCS and the majority (87.8%) of this subsample identified cost as the major barrier to access. No statistically significant difference was found between the BS and BS/BCS group in terms of socioeconomic variables (income, education, employment). The mean scores on the GAD-7 (6.08 ± 5.97 vs. 3.50 ± 3.10, p=0.030) and PHQ-9 (6.40 ± 6.77 vs. 2.40 ± 2.37, p=0.002) were significantly higher for the BS versus BCS/BS group. BCS/BS group patients had significantly higher SF-36 physical health component scores (56.80 ± 4.88 vs. 49.57 ± 8.25, p = 0.010). There was no significant difference between the BCS/BS and BS groups in terms of the SF-36 mental health component scores (45.61 ± 15.06 vs. 46.97 ± 10.08, p=0.786). Conclusions: The results confirmed that bariatric surgery patients who desire BCS post-surgery perceive cost as a major barrier. Patients undergoing BCS may experience improved physical quality-of-life but not mental quality-of-life; however, BCS may improve specific aspects of psychological distress, such as aspects of depression and anxiety. Further research is needed to replicate these findings in larger samples.

**NR5-9**

**ETHICAL CHALLENGES IN THE TREATMENT OF SEVERE ANOREXIA NERVOSA IN ADULTS**

*Lead Author: Ram J. Bishnoi, M.D.*
*Co-Author(s): Victoria Rodriguez, M.S.N., R.N., P.M.H.N.P., Vivek Singh, M.D., Marlon P. Quinones, M.D.*

**SUMMARY:**

Introduction:
Adult anorexia nervosa (AN) is associated with one of the highest mortality rates of any psychiatric illness and treatment refractoriness. There are several ethical challenges in the treatment of AN. Assessment of patients' capacity to make medical decisions, and discussions about medical futility when facing a lack of response to available evidence-based treatments, are two important ethical considerations. Here we discuss a case of severe AN treated in a teaching hospital setting by the consultation-liaison (CL) psychiatry team which illustrates the ethical dilemmas confronted when caring for such patients.
Case study:
A 33 year old female with 10 years duration of illness was admitted in severely malnourished condition (BMI of 10.1). She had failed all prior treatments including two months in a specialized eating disorder residential program and seven weeks of inpatient treatment at a large multispecialty hospital. Prior to discharge from the hospital, she was determined to be a treatment failure and the argument of "medical futility" was evoked with patient's agreement. She was discharged home with palliative care and brought to our hospital by family members several days later. CL psychiatry deemed that the patient lacked capacity given her impaired reasoning ability secondary to depression and anxiety as well as core AN symptoms including distortions in body image and eating behaviors. She was called incompetent to make decision by the court and guardian was appointed to make her health care decisions. Her inability to maintain oral food intake (POi) less than 15% per day prompted, against her wishes, the need for parenteral nutrition which was given for 65 days along with olanzapine and bedside psychotherapy. Patient had a weight gain of only 0.14lb/day and there was no improvement in core AN symptoms, depression, or anxiety. Due to her prolonged hospital stay, refractory symptoms, and failure to improve her nutritional status, a multidisciplinary team of psychiatrists, internists, nutritionists, and palliative care specialists met with the legal guardian to consider invoking medical futility and discharging the patient to hospice care. As a last resort, a novel treatment of ketamine infusions over five days was tried, which led to rapid and sustained improvement in POi and weight gain as well as her depression and anxiety. This benefit was maintained post-hospital discharge.
Conclusion:
We argue against the idea that adult patients with severe AN have the capacity to refuse potentially life-saving treatment as well as the concept of medical futility in such cases. AN is associated with symptoms of depression and anxiety related to distortions in body image and eating behaviors that collectively impair capacity to make medical decisions. Due to this altered affective state, it seems ethically appropriate to override patient decisions to refuse life-saving treatment.

**NR5- 10**

**MOOD, SEASONALITY AND WEATHER SENSITIVITY: IS THERE ANY RELATION?**

*Lead Author: Andrea Bulbena, M.D., M.Sc.*
*Co-Author(s): Guillem Pailhez MD, PhD, Carolina Baeza-Velasco PhD, Emma Buron PhD, Antonio Bulbena MD, MSc, PhD*

**SUMMARY:**

Background:
Albeit both seasonality and weather changes have shown separately effects on mood and anxiety, there is not much information on how season and weather interact in their clinical effects. Research on seasonal monoaminergic neurotransmitter variations and particularly serotonin turnover seem to give support to a close relation between these two ecological variables. Depressive and anxiety symptoms have also been found to covariate with seasonality and weather. In this Study we will study the interaction between several dimensions of weather sensitivity and seasonality and their effects on anxiety and depressive symptoms.
Methods:
A cross sectional study was carried out in a sample180 subjects in a High School in Barcelona, Spain. All participants filled Hospital Anxiety-Depression Scale (HAD), the Spanish validated version of the Seasonal Pattern Assessment Questionnaire (SPAQ) and the (WEQ) Weather Effects Questionnaire. Data were analyzed applying parametric and non-parametric correlations and comparisons and stepwise regression models to identify the corresponding variable weights. Reliability of all instruments was assessed prior to start the study.
Results:
In a univaried analysis, Seasonality was not found to correlate with height (p< .80) and sex (p< .09) but significant correlations appeared with age HADs anxiety (p<.001), HADs depression (p<.001), WEQ (p<.003) and weight (p<.02). After correcting by age and sex, only Weather Effects (p= 0.0043) and Depression (p<.001) were included in the multiple stepwise regression model.

Conclusions:
The Seasonality effect is closely related with several weather effects and this is also related to depressed mood as collected in self-rated questionnaires. Very often seasonality studies neglect the value of weather effects, which clearly contributes to seasonal variations and also covaries with mood regulation. These findings are consistent with serotonin turnover patterns and the monoaminergic variations found in weather changes.

**NR5-11**
**POLYMORPHISIMS OF SEROTONIN TRANSPONDER (5-HTT) GENE AND MAJOR DEPRESSIVE DISORDER: A CASE-CONTROL STUDY**
Lead Author: Delia M. BUstamante, M.D.
Co-Author(s): ISABEL PEREZ OLMOS, Médico Psiquiatra, MILCIADES IBAÑEZ Epidemiólogo

**SUMMARY:**
Major depression is a common and complex disorder of polygenic origin. Given its importance in the pathophysiology and therapy of disease, it's demonstrated that gene encoding serotonin transporter (5-HTT) is associated with the disease. We conducted a study to assess the association between polymorphisms of 5-HTT gene and major depressive disorder.
Methods. Case-control study, with patients classified from DSM-IV-TR structured interview and matched 1:1. Results were analyzed using central tendency and dispersion measures, chi-square, Odds Ratios and conditional logistic regression. We evaluated the presence of Hardy-Weinberg equilibrium with Pearson chi-square.
Results. 69 cases and 69 controls were evaluated. Socio-demographic and clinical variables were similar to those reported previously in the literature. The sample was in Hardy-Weinberg equilibrium. No statistically significant association was found between major depressive disorder and 5-HTT gene polymorphisms.
Discussion. Results are similar to those previously reported by other studies in bipolar patients Colombians, suggesting that in this population there is no association between affective disorders and 5-HTT gene polymorphisms. More studies are needed.
Key words. Depression, Serotonin, Serotonin Transporter, Genetics, polymorphisms.

**NR5- 12**
**TO SWITCH FROM PALIPERIDONE PALMITATE TO RISPERIDONE LONG-ACTING INJECTABLE: A CASE REPORT**
*Lead Author: Stella Cai, M.D.*
*Co-Author(s): Taya C. Varteresian, D.O., Brenda L. Jensen, M.D., Charles S. Nguyen, M.D.*

**SUMMARY:**
INTRODUCTION: Veteran Affairs (VA) VISN 22 pharmacy formulary does not allow other antipsychotic medications to be concurrently given with Paliperidone Palmitate Injectable (PP). This is the first case report illustrating the switch from Paliperidone Palmitate Injectable (PP) to Risperidone long-acting injectable (RIS-LAI).
CASE SUMMARY: The case study is based on a 68 year old Filipino male veteran with schizoaffective disorder-bipolar type presenting with acute mania and paranoid ideation on an inpatient unit. Patient was adherent to antidepressants and on 2-3 months of PP (156mg Q4week) at home. On admission, antidepressants were tapered off while quetiapine and divalproex extended release were subsequently added. Since PP could not be given with another antipsychotic medication under hospital formulary, PP was transitioned to RIS-LAI. Patient received his last PP injection two days prior to admission. RIS-LAI was given on day 5 of hospitalization, which was one week after his last PP injection. Patient's paranoid ideations resolved by day 8 of hospitalization, but he remained hypomanic with grandiosity, which was measured with YMRS score. On day 13 of hospitalization, additional risperidone oral supplement was given for another one week to further stabilize his hypomanic symptoms. By day 16 (discharge day), patient's PANSS score was significantly reduced (>50%) from admission as CGI-I score improved. Patient had mouth puckering and shuffling gaits on admission, which were not worsened with this medication switch. The only new symptoms developed were mild cogwheel rigidity and sialorrhea.
DISCUSSION: The transition from PP to RIS-LAI is necessary as RIS-LAI is accessible under current hospital formulary and is also the only FDA approved long acting injectable for maintenance of bipolar disorder as monotherapy. The every two-week administration of RIS-LAI requires risperidone oral supplement during the initiation to cover the three week period until RIS-LAI reaches therapeutic level. However, this patient was already on PP for 2-3 months with sustained plasma concentration lasting for at least 4 weeks. We initiated RIS-LAI one week after his last PP injection, assuming that the active ingredient (9-hydroxy-risperidone) of PP would substitute for the risperidone oral supplement during the three week initiation phase. In this case, patient's paranoid ideation did resolve by week 1 after RIS-LAI injection, but hypomanic symptoms persisted, which required additional risperidone oral dosing for one week to resolve it.
CONCLUSION: To transition from PP to RIS-LAI, RIS-LAI could be given one week after last PP injection with tolerable safety profile.

**NR5-13**
**CORRELATIONS OF SOMATIC AND BRAIN METABOLIC ALTERATION IN NONHUMAN PRIMATES UNDER VARIABLE FORAGING DEMAND CONDITION**
*Lead Author: Subhash Chandra, M.B.B.S., M.D.*
*Co-Author(s): Dunyue Lu; Jeremy D. Coplan; John Kral*

**SUMMARY:**
Introduction: Using proton magnetic resonance spectroscopic imaging ((1) H-MRSI), we examined the role of early life stress on neuronal integrity as reflected by N-acetyl-aspartate (NAA or NAA/Creatine) in the caudate nucleus (which contains the nucleus accumbens) in relation to other markers of early-life stress: corticotrophin-releasing factor (CRF), hippocampal volume and, metabolic indices [body weight, glucose and lipid profile, as per our previous studies]. We hypothesized that Variable Foraging Demand (VFD) rearing may alter caudate NAA and that the relationship between caudate NAA or NAA/Cr and markers of early life stress would be differentially affected by VFD rearing.

Method: Thirteen Bonnet Macaque males reared under VFD

conditions and 9 age- matched control subjects underwent MRSI during young adulthood. Voxels were placed over the caudate nucleus. Cerebral spinal fluid CRF concentrations, blood lipid profiles and body mass were measured according to methods outlined. MRI volumetric was employed to measure hippocampal volume.
Results: The major findings of the current study were:
(1) VFD-reared monkeys' exhibit significantly increased absolute NAA in the left caudate nucleus in comparison to controls.
(2) In comparison to normally reared controls, relatively high CRF is associated with relatively increased absolute NAA in the right caudate nucleus in VFD monkeys.
(3) Relatively higher caudate left absolute NAA concentrations are associated with relatively greater volume reduction of the left hippocampus in VFD monkeys.
(4) VFD-rearing significantly disrupts the normal inverse correlation of caudate left absolute NAA concentrations with body weight.
(5) In comparison to healthy volunteers, relatively high absolute NAA concentrations of right caudate absolute NAA concentrations is positively correlated with blood Very Low Density Lipoprotein (VLDL) levels in the VFD group.
Conclusion: The current data indicate that VFD-reared monkeys exhibit significantly increased absolute NAA concentrations in the left caudate nucleus in comparison to normally-reared controls. Additional analyses reveal a complex relationship between absolute NAA and/or NAA/Cr concentrations in the caudate nucleus with differing relationships with markers of early-life stress in comparison to normally-reared controls. These data support the view that neuronal integrity in the caudate nucleus in combination with early life stress impacts on hippocampal volume, CSF CRF concentrations and metabolic indices, perhaps through alterations in function of the nucleus accumbens.

**NR5-14**
**IMPLEMENTATION OF CAM-ICU TO SCREEN FOR DELIRIUM, LOOK FOR CHANGES IN PRESCRIBING PATTERNS AND ICU LENGTH OF STAY, IN MEDICAL AND SURGICAL PATIENTS**
*Lead Author: Monika Chaudhry, M.D.*

**SUMMARY:**
Background: Delirium is a very common in the ICU up to 80%, and remains underdiagnosed and undertreated which leads to increased length of stay and an increase in morbidity.
Objective: To examine the change in prescribing patterns of medications and length of stay in the ICU after the implementation of the CAM-ICU, before creating a protocol for treatment of delirium at a busy private/academic hospital.
Methods: Medical and surgical attendings, fellows, and residents as well as nurses were given an initial survey to get a sense of their understanding of the incidence of delirium and behavior practices. All ICU's at Keck Medical Center were identified, which included medical, surgical, and cardiac. The average length of stay over 10 months was obtained. Phase I includes chart review targeted patients that received benzodiazepines, z-hypnotics, Benadryl, Precedex, and antipsychotics. Additional data gathered include if patient as intubated, individual length of stay, operative medications, use of restraints, and if there was discharge diagnosis of delirium. Next CAM-ICU was implemented in the ICU with the longest length of stay. This included training nurses to detect delirium and monitor this on each shift for each patient in that ICU. Then chart review of that specific ICU will be done to determine if there was a decrease in length of stay and any change in prescribing patterns. Phase II of the project includes utilizing CAM-ICU in all ICU's at the medical center, while being built into the electronic medical record and in addition a standardized treatment protocol for delirium.
Conclusions: Currently preliminary data collection is occurring of prescribing practices; furthermore, phase I data and interim analysis will be available by the time of presentation. There multiple endpoints in this study, with the goal to education medical and surgical to recognize delirium through standardized screen and clinical exam with a more standardized protocol to reduce length of stay and comorbidities.
References:
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Financial Disclosures: none

**NR5- 15**
**THE PATTERN OF CHANGES IN PSYCHIATRIC CONSULTATION AT A NEWLY-OPENED HOSPITAL DURING FIRST SIX YEARS**
*Lead Author: Eunkyung Choi, M.D.*
*Co-Author(s): Doo-Heum Park, M.D., Ph.D., Seung-Ho Ryu, M.D., Ph.D., Jaehak Yu, M.D., Ph.D., Ji-Hyeon Ha, M.D., Ph.D.*

**SUMMARY:**
Objectives:
There are a lot of studies to evaluate the current status of consultation liaison at a general hospital.
However, there are few studies using many samples to generalize and data from the newly-opened hospitals is scarce. Thus, the study was conducted to evaluate the changing patterns in consultation-liaison psychiatry at newly opened general hospital by using a huge amount of electrical medical record.
Method:
Psychiatric consultations in the first six years after operating a new hospital were reviewed and psychiatric variables, including reason for referral, psychiatric diagnosis, distribution of psychiatric consultation in department and classification of consultation requests were collected using computerized clinical database to examine 9,689 referrals.
A method for evaluating the change of the referral patters in consultation liaison psychiatry is applied to the study of 9,689 requests received for a 6-year period. The first step of the study was the classification of the consultation requests, taking into the following 4 items; 1) existence of psychopathological symptoms at admission; 2)the previous psychiatric history/records; 3)the existence of psychopathological symptoms at the time when requested; 4) when psychopathological symptoms really exist.
Result:
There were 9,689 consecutive consultation requests in six

years, and there are 6,159 patients participated in the study during six years. Overall consultation rate was 3.30% of all admissions. The rate was relative high in the first year, but decreased and then stabilized. The reasons for most referrals did not change significantly over the 6 years. Previous psychiatric history, depression, irritability was the most frequent reason for referral and the major diagnosis during the study period is mood disorder and delirium over the study period. Most importantly, the main reason of recurrent request was delirium.
Conclusion:
Sociodemographic variable, relatively consultation rates, reasons for referral and psychiatric diagnoses did not change any significant changes during the study period. However, the ratio of geriatric patients increased and were more than 50% of all patients requested. Furthermore, comprehensive postgraduate education for physicians and arrangement of timely consultations are needed. Education should focus on common psychiatric problems among medical inpatients, such as depression and delirium. According to the result of this study, the information on psychiatric consultations to other hospitals is offered.

**NR5-16**

**THE IMPACT OF METAPHORICAL PRIMES AND ATTACHMENT STYLES IN INTERPERSONAL RELATIONSHIPS**

*Lead Author: Andrew Colitz, M.A.*

**SUMMARY:**

Researchers within social and cognitive psychology are only beginning to look at the impact of metaphors in influencing interpersonal relations. The goal of the current project was to gain a better understanding of the unique characteristics and thought processes that initiate a move toward thinking metaphorically and how those cognitive processes subsequently impacted intimacy and self-disclosure within an interpersonal encounter with a confederate. Participants were primed through a (1) non-linguistic video animation and replication as well as (2) linguistically conceptualizing the presented visual animation. The current study also examined the interaction effect of attachment style towards intimacy and self-disclosure between participants and the confederate.
This study was a one-way between groups experimental design. The independent variable is means of presentation of the prime, with three levels: (1) a linguistic understanding of the visual prime, (2) non-linguistic embodied prime, and (3) control group. It was hypothesized that there will be significant differences in the measure of intimacy and self-disclosure across the three experimental conditions in that: the two metaphorical experimental conditions will have significantly higher intimacy and self-disclosure scores than the control group. For the hypothesis testing, we ran a multivariate analysis of covariance (MANCOVA) with 90 university subjects in to order to test for significant differences between group means with multiple dependent variables of self-disclosure and intimacy scales.
Results: There were significant differences in the measure of intimacy and self-disclosure scores across the three conditions in that the two metaphorical experimental conditions had significantly higher intimacy and self-disclosure scores for the following dependent variables: Likelihood of future friendship, Felt closeness and Intimacy, and Degree of Participant Self-Disclosure than the non-metaphorical control group. However, as part of the exploratory hypothesis there was not a significant difference in intimacy and self-disclosure scores between the two metaphoric conditions. Surprisingly, the current study also demonstrated that there was no statistical significance between secure attachment and the dependent variables of intimacy and self-disclosure. Participants were able to experience closeness, intimacy, and self-disclosure despite self-reports of insecure attachment style. The results of the study suggest a leaning towards a social cognitive perspective of relating to a new peer, in which one's momentary thoughts, feelings, unaware thoughts and feelings, and interpretations of events have a fundamental influence on behavior with another. Attachment theorists link between enduring and stable attachment and communication patterns that consistently impact interpersonal encounters across time, situatio

**NR5-17**

**THE RELATIONSHIP BETWEEN ATTACHMENT STYLE AND SPIRITUAL BELIEFS: A REVIEW OF LITERATURE**

*Lead Author: Priyanka S. Comfort, M.D.*
*Co-Author(s): Melissa Stoops Ph.D., Marilyn Baetz MD FRCPC, Gina C. Adams MD FRCPC*

**SUMMARY:**

Background: Recent psychiatric literature suggests spiritual integrated psychiatric treatments may have promising results in all ages. For instance, negative attachment to God has been linked to substance abuse in young men and risk for eating disorders in young women. It has also been suggested that religious beliefs and behaviours might be related to the experience with caregivers early in life, through the interpersonal working models developed within a parent-child attachment bond. For instance, the religious views of individuals with secure attachment might partly reflect the adoption of a sensitive parent's religious standards whereas insecure offspring are hypothesized to be relatively less likely to adopt their more insensitive attachment figure's religious standards. However, both beneficial and detrimental sides of religion have been reported. The aim of this study was to explore the relationship between attachment patterns and religiosity in people from different religious backgrounds.
Method – A Pub Med search for studies targeting the relationship between attachment style and religious/spiritual beliefs was performed for the past 15 years. We used the keywords "religion" and/or "spirituality" and "attachment". Reference list of the included articles were screened for additional studies. All studies meeting the above criteria were included irrespective of faith. The type of attachment measures varied across studies, ranging from parent-child/caregiver relationships to romantic partners.
Results - 14 papers met the inclusion criteria. 4 studies explored the relationship between attachment and spiritual/religious beliefs in children, 7 in adults and 3 in elderly. The type of faith varied across studies with 4 Catholic, 1 Presbyterian, 4 Jewish and 8 mixed or non-specified religious groups. 12 studies found an association between spirituality and attachment, with only 2 studies reporting negative results. Attachment measures varied across studies. 2 studies found perceptions of parental rejection to be related to New Age spirituality. Overall, secure attachment to God was inversely associated with distress, whereas both anxious attachment to God and stressful life events are positively related to distress.

Conclusion: Our review supports the link between internal working models of parents and God in various ages and religious faiths. Monotheistic religions, particularly of the Christian faith, were overrepresented. Further studies are needed to clarify the relationship between attachment to parents and religiosity, as well as its impact on health, resilience, and overall individual function.

**NR5-18**

**SCREENING FOR DEPRESSION IN PATIENTS WITH TRAUMATIC OR ACQUIRED BRAIN INJURY: THE CHALLENGE OF FINDING APPROPRIATE AND EVIDENCE-BASED SCREENING TOOLS**

*Lead Author: Adriana de Julio, M.D., M.Sc.*
*Co-Author(s): Bernadette Stevenson, M.D., Ph.D*

**SUMMARY:**

INTRODUCTION: There is extensive data on the neuropsychiatric sequelae of Traumatic Brain Injury (TBI) and Acquired Brain Injury (ABI). Major depression is undertreated in both TBI and ABI. Early screening for insomnia, depression, and anxiety facilitates early diagnosis and treatment, and reduces the mortality and morbidity in patients with a brain injury.
HYPOTHESIS: Although clinicians may be aware of the need to screen for depression in persons with TBI or ABI there is not clear evidence for which screening tool or combination of tools to use.
METHODS: In order to understand and analyze tools to screen and monitor depression in those with brain injury, a literature review was undertaken. Relevant articles published between 2009 and 2013 were identified by searching PubMED using the following MeSH search terms: traumatic brain injury, acquired brain injury, and head injury. Each of these terms was cross-referenced with the following MeSH terms: psychosis, depression, rehabilitation, screening, and psychiatric status rating scales. The results were limited to human studies and English language peer reviewed articles.
RESULTS 106 articles were identified and 64 articles met the final criteria. Twenty-seven different screening tools were used in the 64 studies with the most common being: Beck's Depression Inventory-II (BDI-II) (25%), Structured Clinical Interview Diagnostic (SCID-IV) (17%), Personal Health Questionnaire (PHQ) (14%), Hospital Anxiety and Depression Scale (HADS) (10.9%), and Hamilton Depression Scale (HAM-D) (9%). Fifty-three studies used multiple screening tools, which were usually a combination of BDI-II and a questionnaire completed independently by a patient.
CONCLUSIONS: Standardized methods and timelines for screening are still in a state of flux and vary between hospitals, government agencies, and academic environments. Given that psychiatrists and neurologists have no definitive neuroanatomical markers to predict the development of major depression and thereby increasing disability, the standardization of depression screening tools could improve the outcome of recovery from TBI and ABI.

**NR5-19**

**STABILITY OF CPK DURING ECT WITH POLYMYOSITIS: CASE REPORT AND REVIEW**

*Lead Author: Benjamin DeLucia, M.D.*
*Co-Author(s): Adeeb Yacoub M.D., Rachit Patel M.D., Andrew Francis M.D., Ph.D.*

**SUMMARY:**

Objective: Report a case and describe the literature on ECT and polymyositis. Background: Muscle diseases including polymyositis (a rare inflammatory myopathy with progressive, symmetric weakness and possible cardiac effects) may add risk to ECT from muscle sensitivity to depolarizing neuromuscular agents or muscle injury during convulsive movements. CPK [serum creatine phosphokinase] provides an index of disease activity in polymyositis. Some reports indicate elevated CPK with ECT in healthy patients, but little is known of CPK during ECT with polymyositis. Method: Case report and literature review using MEDLINE. Results: A 74-year-old female developed initial onset of major depression after steroid treatment for polymyositis. After failed medication trials, she was admitted for ECT. The obtained baseline CPK value was 1301 U/L [normal range 26-174 U/L]. Treatment technique included pre-ECT intravenous hydration, succinylcholine, methohexital and modified bifrontal electrode placement. Depressive symptoms resolved. She had a total of 27 ECT sessions as an inpatient and outpatient over the next 4 years. Each course of treatment was effective for depression without symptoms of muscle disease activity. During this period, there were 3 ECT sessions where pre-, post- and 4-hour post-treatment CPK were measured. CPK levels were 1208, 1194 and 1721 U/L before treatment and 1194, 1123 and 1670 U/L (1%, 17%, and 3% lower) directly after ECT, likely secondary to intravenous hydration. CPK rose 29%, 12%, and 7% from baseline at 4 hrs, and was unrelated to motor or EEG seizure duration. Over the entire treatment period there were 42 CPK measurements [range 786 to 3869 U/L]. The literature review found three prior case series with variable CPK elevation in 12/12, 3/26 and 2/15 patients without muscle disease receiving ECT. Two relevant prior case reports with myositis were noted. One was a 32-year old woman with polymyositis treated with a successful course of ECT using succinylcholine without adverse effects. The second case was a 74-year old man with inclusion-body myositis who received two uneventful and successful ECT courses using mivacurium, a non-depolarizing paralytic agent. Conclusion: The present case and the 2 published cases suggest ECT can be safe and effective in inflammatory muscle disease. Our case also is the first to report extensive CPK monitoring over an extended treatment course of ECT.

**NR5-20**

**QUALITATIVE ANALYSIS OF MOTIVATION FOR MEDICATION ADHERENCE AND NONADHERENCE IN PSYCHIATRIC OUTPATIENTS AND PATIENTS WITH CHRONIC MEDICAL ILLNESS**

*Lead Author: Aryeh Dienstag, M.D.*
*Co-Author(s): Jyothsna Karlapalem M.B.B.S., Daniel Cukor Ph.D.*

**SUMMARY:**

Introduction: The WHO lists treatment adherence as a critical issue both in terms of quality of life and health economics – with only 50% of patients adhering to treatment recommendations. This seems to be relevant to both psychiatric patients and patients with chronic medical problems. Current study aims to gather qualitative data about motivation for both medication adherence, and non-adherence in stable psychiatric outpatients and patients with end stage renal disease. This will enable us to compare adherence reasoning in life supporting versus life enhancing treatment.

Methods: A brief semi structured interview was administered by a third year psychiatry resident, who was not involved in the treatment of participants and responses were recorded anonymously. 9 patients in our Psychiatric OPD and 9 patients in our kidney transplant clinic completed the study. Patients at the psychiatric clinic were stable and did not have psychotic disorders. Patients at the transplant clinic included patients who were both pre and post-transplant. The results were then coded and qualitatively analyzed.
Results: Transplant clinic patients had greater pill burden (2x medications, 7.8 vs. 4.4 and 3x pills, 11.3 vs. 2.6). Participants in both clinics endorsed a high level of medication adherence (psych n =7; transplant 6). The most common cited reasons cited for taking medications by transplant group were "to live or to be healthy" (5) and felt "need for medication" (4) and in psychiatric patients, they were "to [viscerally] feel good" (5) and "ability to accomplish things" (3). Both groups cited "medications help" (psych: 2; transplant: 3) and a desire to prevent bad outcomes as a reason to take medication (psych: 3; transplant: 2). Both groups cited adverse effects as the primary reason for not taking medication (psych: 4; transplant: 5). The psychiatry group also cited feelings of dependence (3vs0), and disagreement with their physician (2 vs. 1) as reasons for the same. A plurality of participants denied prioritizing which medications they took (psych: 4; transplant: 4); reasons listed for prioritization of medication included affordability, immediate gratification (2), avoiding medication withdrawal and avoiding transplant rejection (2).
Discussion: This data suggests that despite diverse patient identity groups there was a significant amount of commonality in their motivations for medication adherence. Results in our study were similar to those described in the literature including disparity of health beliefs of provider & patient, social stigma, immediacy of results, unpleasant side effects and perceived risk of disease.
Conclusion: Patients relative risk/benefit ratio of medication taking may have more to do with the patient's beliefs about medication adherence in general more than medication/disease specific cognitions. Approaches to adherence promotion that incorporate patient perspectives and belief structures appear warranted.

**NR5-21**

**SELF-MONITORING IN MULTI-STATE RECURRENT NEURAL NETWORKS CAN GUIDE STATE TRANSITIONING AND PROVIDE A MECHANISM FOR COMMUNICATION BETWEEN NETWORKS**

*Lead Author: Sean Escola, M.D., Ph.D.*
*Co-Author(s): Larry F. Abbott. Ph.D.*

**SUMMARY:**

Neural networks can operate in multiple computational states corresponding to different tasks or subtasks. Transitioning between these states may be influenced by a network's own activity. For example, monkeys have reaction time increases if motor cortex is disturbed with microstimulation immediately before the go cue, suggesting that the transition between the delay and movement states has been postponed (Churchland and Shenoy, J Neurophysiol, 2007). This could reflect a self-monitoring system that recognizes the post-microstimulation activity as noisy, and thus delays transitioning until appropriate movement preparatory activity is recovered. To study transitioning, we trained a recurrent neural network to possess multiple non-fixed-point states, each associated with a particular trajectory produced by the network's linear readout unit. Inputs drive the network to transition between these states. We then included additional readout units ("transition opportunity detectors") whose roles are to monitor network activity and act as gates that permit transitioning only when the network activity is within some region of firing-rate space. Depending on the detectors' tuning, a wide range of network behaviors can be produced including no transitioning, deterministic cycles of states, and both Markovian and non-Markovian stochastic transitioning (in the presence of noise). Thus we show that networks can monitor their activity and influence their state transitioning as in the microstimulation experiments. Furthermore, we show that in large networks, with high probability, random projections will provide a library of detectors from which those needed to effect a desired transitioning behavior can be chosen. These units tile firing rate space in a state-dependent manner, and, as state-dependent dynamics evolve, their population response resembles the condition-dependent time cells seen in hippocampus (Eichenbaum, in preparation) and posterior parietal cortex (Harvey et al., Nature, 2012), suggesting that these heretofore unexplained results may be features of random connectivity in the setting of neural dynamics.

**NR5-22**

**MENTAL HEALTH REFERRALS FROM PRIMARY CARE: DOES SHARED MENTAL HEALTH CARE MAKE A DIFFERENCE?**

*Lead Author: Graham Gaylord, B.Sc., M.H.A.*
*Co-Author(s): S. Kathleen, Baily, M.A., John, Haggarty, M.D.*

**SUMMARY:**

Introduction: Primary care providers frequently make referrals to outpatient community mental health (MH) services for common mental disorders (CMD), psychosocial problems, and serious mental illness (SMI). Shared mental health care (SMHC) models differ from traditional outpatient MH services in that physicians refer to a co-located MH service where patients receive treatment in a less stigmatized environment. This study examined whether outpatient MH referrals from five primary care sites differed between sites with and without SMHC.
Methods: Chart reviews were conducted to examine referrals (N=4600) from five primary clinics to five outpatient community MH services between January 2001 and June 2004. Referrals (N=2050) from two demographically similar clinics (one with SMHC, one without) were also compared.
Results: Patients referred to SMHC and non-SMHC did not differ in sex or age. Clinics with SMHC made significantly more MH referrals overall, accounting for 40.5% of all referrals. Referrals for CMDs (Odds ratio: depression=3.38; anxiety=2.95, p<.001), psychosocial problems (OR=6.07, p<.001), and SMI (psychotic symptoms OR=1.59, p=.022) were significantly more likely to be referred to SMHC than other MH services. When one clinic with SMHC was compared to a similar clinic without SMHC, referral patterns for CMD and SMI differed significantly between the two clinics (X2 = 47.192, df = 2, p<.001). The clinic with SMHC referred 2.58, 5.15 and 1.83 times more patients for depression, anxiety, and SMI, respectfully. Referrals for depression to non-SMHC were 1.45 times more likely from the non-SMHC clinic (t =-3.53,df=531.85, p<.001).
Conclusion: Access to SMHC appears to increase MH referrals

from primary care, usually for SMHC services. SMHC appears to be acceptable to primary care providers for treatment of CMD and SMI, and more accessible than traditional community based MH services. The SMHC model appears to enhance the MH referral filter at the primary care level by increasing access to care while decreasing referral rates to traditional MH services.

**NR5- 23**

**THE MANAGEMENT OF DISRUPTIVE AND POTENTIALLY VIOLENT PATIENTS ON INPATIENT MEDICAL UNITS**

*Lead Author: Simona Goschin, M.D.*
*Co-Author(s): Clifford Gimenez MD, David Edgcomb MD, Nancy Maruyama MD*

**SUMMARY:**
Introduction: The management of disruptive patients on medical floors can be very challenging especially since the staff is not trained to manage this type of situation. A fast and organized approach is needed and a clear algorithm for intervention is essential. Our hospital has developed a behavioral "code" for the non-psychiatric floors called a STAR code (Safety Team Assessment Response). We describe the STAR code procedure and report data on these patients.
Methods: We performed a retrospective review of the STAR code consults from January 2013 to December 2013 for demographics, psychiatric and medical diagnoses.
Results: Thirty-two patients required STAR codes. Twenty-three were male and nine female. There were two predominant age groups: 40-50 year-olds (n=9) and >70 year-olds (n=9). The psychiatric diagnoses included psychotic disorders (n=11), neurocognitive disorders (n=10), substance use disorders (n=8), delirium (n=5), mood disorders (n=5) and personality disorders (n=4). Most patients had cardiovascular disease (n=21) and a quarter had comorbid diabetes mellitus (n=9).
Discussion: We present an algorithm developed in our hospital for intervention in emergent situations when patients threaten or become violent on medical units. We describe the training and composition of the team and the role of the consultation liaison (CL) psychiatrist. Our data suggests that STAR code patients are predominantly male with a bimodal age distribution (middle-aged and elderly). Psychotic, cognitive disorders and cardiovascular disease are common. Further research is needed to identify risk factors for disruptive behavior on medical wards and to improve behavioral code algorithms.
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**NR5-24**

**TREATMENT CHALLENGES AND PREVENTATIVE MEASURES OF PSYCHOSIS AND MANIA WITH MENSTRUAL EXACERBATION**

*Lead Author: Heather Greenspan, M.D.*
*Co-Author(s): Michael Olla, M.D., Samrah Waseem, M.D., M. Haroon Burhanullah, M.D., Asad Hussain, M.D, Omar Colon, M.D., Faiz Cheema, M.D., Shawnna Ogden, Medical Student IV*

**SUMMARY:**
The connection between menstrual disorders and mental disorders has been observed since the 18th century. The menstrual cycle has long been implicated as a trigger for the onset and worsening of depressive, manic, psychotic, and anxiety symptoms. It exerts its mechanism of action through estrogen. Estrogen regulates various aspects of GABA and dopaminergic transmission.
During the psychiatric interview, clinicians often neglect to inquire as to the pattern of the menstrual cycle throughout the reproductive lifespan- duration, regularity, flow, interval, its temporal relationship & female's grade of decompensation around the luteal phase of her menses. Management of menstrual psychosis requires an integrated & collaborative approach including pharmacological and non-pharmacological treatment, and preventative strategies to increase the duration between the relapses of illness.
The role of estrogen and the hypothalamic –pituitary-gonadal axis in neuropsychiatric functioning is under current investigation as the likely etiology of this uncommon, yet historically well documented disorder. In this paper, we will present one such case study.

**NR5-25**

**COGNITIVE FUNCTIONS, APOE GENOTYPE, AND HORMONAL REPLACEMENT THERAPY IN A POSTMENOPAUSAL POPULATION**

*Lead Author: Kasia Gustaw Rothenberg, M.D., Ph.D.*
*Co-Author(s): Angela Wójcik-Fatla, Ph.D., Edyta Długosz-Mazur, M.S., Iwona Bojar, M.D. Ph.D.*

**SUMMARY:**
Introduction: Growing body of evidence suggests that estrogen plus progestogen therapy (EPT) may modify the risk of developing dementia in the ApoE polymorphism related manner. The mechanism and subsequently clinical importance of such an effect remains however unexplained.
Aim: The objective of this study was to explore the influence of EPT on cognitive functioning of women in their postmenopausal stage of life in relation to APOE polymorphism.
Methods: The group of 107 women was selected (53 women on EPT) for the final evaluation. Two years from the last menstruation as well as FSH level >30 U/ml and the lack of cognitive impairment on MoCA were considered the inclusion criteria. Computerized battery of test CNS-Vital was used to assess cognitive functions.
ApoE genotype was determined by multiplex PCR. Statistical analysis was performed using STATISTICA software.
Results: Majority of women scored below 50 percentile on all the cognitive domains tested, especially on speed of processing. The presence of ApoE4 corresponded with the decreased functioning as opposed to ApoE2 which was present in women with better level of functioning overall and specifically in: processing speed, executive functioning, psychomotor speed, Reaction time, Complex attention and Cognitive flexibility. EPT

seemed to improve functioning only in processing speed. E2/ε3 and ε4 carriers supplemented with EPT functioned significantly better in speed processing when compared to those none treated. The opposite effect however was observed in ε3/ε3 carriers. It should be noted that ApoE polymorphism may be a factor in predicting the effect of EPT on cognitive functioning in postmenopausal period.

**NR5-26**

**COGNITIVE IMPAIRMENT IN COMPLICATED GRIEF**

*Lead Author: Charles Hall, B.A.*
*Co-Author(s): Amy Begley, M.A., Meryl Butters, Ph.D., Jody Corey-Bloom M.D., Ph.D., Barry Lebowitz, Ph.D., Charles F Reynolds III, M.D., M. Katherine Shear, M.D., Naomi Simon, M.D., Sidney Zisook, M.D.*

**SUMMARY:**
Introduction: Psychiatric disorders such as depression are often associated with mild cognitive impairment (MCI) and may be a risk factor for dementia. This raises the possibility that, like depression, complicated grief (CG), which often coexists with major depression and post traumatic stress disorder, may induce chronic stress on the brain leading to neurotoxicity and cognitive decline. Early studies have suggested that complicated grievers have greater neurocognitive deficits compared to non-bereaved and normally bereaved controls.
Objective: To explore and describe the relationship between cognitive impairments and CG. We will identify if, and to what extent cognitive functioning differs in complicated grievers compared to normal controls after adjusting for age, sex and education.
Methods: The Montreal Cognitive Assessment (MoCA) test was administered to our sample of 313 CG participants as a part of an ongoing NIMH-sponsored multicenter trial investigating CG treatment. CG was defined as a score of 30 or greater on the Inventory of Complicated Grief (ICG). Data from 250 control participants have been previously published by Corey-Bloom and colleagues at UCSD. We measured cognitive impairment using the MoCA. Total MoCA scores were calculated using the sum of the items. No point was added if education was fewer than 12 years. Analysis of covariance was used to determine if global MoCA scores differed between persons with CG participants and normal controls.
Results: Increased age was associated with decreased MoCA scores ($F(1,556)53.53$, $p<0.001$). Women and those with more education had higher MoCA scores ($F(1,556)=5.28$, $p=0.02$ and $F(3,556)=8.85$, $p<0.001$), respectively. After controlling for age, sex, and education complicated grievers displayed lower global MoCA scores relative to normal controls ($F(1,556)=8.46$, $p=0.004$). The mean (SD) MoCA score in CG was 26.8 (2.2) compared with 27.1 (2.2) in controls. The median MoCA score was 27 in CG and 28 in controls. Age, sex, education and sample group explained 15% of the variance in MoCA scores while sample group alone explained approximately 1.3% of the variance.
Conclusion: Complicated grievers displayed greater levels of cognitive impairment as compared to controls even after controlling for age, sex, and education. This study adds to the growing literature detailing the conceptual framework of CG. Future studies exploring cognitive dysfunction in the context of CG may further aid the description of CG's clinical phenotype and may have implications for enhancing diagnostic accuracy, treatment and screening.

**NR5-27**

**THE EFFECT OF PHOSPHATASE EXPOSURE ON NEURONAL FUNCTIONS IN CAENORHABDITIS ELEGANS EXHIBITING MUTANT TAU PROTEIN**

*Lead Author: Patrice J. Holmes, M.D.*
*Co-Author(s): Kasey Llorente, Linda Niedziela, Ph.D., Tonya Laako Train, Ph.D., Emily Anari,Sullivan Parkes*
*Acknowledgements:Maria Llorente, M.D.*

**SUMMARY:**
Introduction: Alzheimer's disease (AD) is a prevalent, debilitating disorder and treatment is an ongoing challenge. Neurodegeneration resulting from neurofibrillary tau tangles is a proposed major pathophysiological pathway leading to AD. To examine the potential to suppress mutant gene expression, in tau protein synthesis, three genotypically different groups of Caenorhabditis elegans (C. elegans) were exposed to the protein modifying enzyme, alkaline phosphatase (alk phos).
Methods: The nematodes were obtained from the University of Minnesota and included wild type and mutant. Mutant C. elegans had genetic mutations which resulted in hyperphosphorylated tau protein, VH254 and VH255, an animal model mimicking AD pathology. Eyelash touch tests applying a probe to the anterior and posterior regions of the nematodes were observed under a dissecting microscope. A scale was developed to quantify the level of responsiveness to touch from 1 (a slow response in one direction) to the highest level of response 4 (rapid response in both directions). This study compared response to stimuli at day 1 before exposure to alk phos and daily for four days after exposure (day 2-5) to three concentrations of alk phos (0.005, 0.0015, and 0.050units/µL respectively).
Results: The mutant C. elegans, VH254 and VH255, showed significant increase in responsiveness (averaged data) after exposure to alk phos. For VH254 mutants the greatest degree of increase in responsiveness occurred during the initial post-exposure test: pre-test (day 1) score of 1 and post-test (day 2) score of 3.5 in the 0.005units/µL group; in the 0.015units/µL group day 1 score 0.7 and day 2 score 2.6. The VH255 mutants displayed progressive increase in responsiveness across the four days of post exposure testing, in both the 0.005 and 0.015units/µL groups. The 0.050units/µL group showed significant increase in responsiveness in the mutant strains however with lower degrees of increase compared to the other concentrations. A two-way ANOVA analysis displayed significant effects of both time ($p < 0.001$) and alk phos concentration ($p < 0.001$) on responsiveness to touch in the mutants.
Conclusion: Exposure to alk phos in the mutant nematodes with hyperphosphorylated tau protein resulted in improved neuronal functioning. This finding suggests a potential strategy to mitigate the effects of hyperphosphorylated tau protein. Improving the understanding of the pathophysiology of AD is an important step toward identifying therapeutic targets. The CNS effects of tau protein hyperphosphorylation is an understudied area and the findings from this study support further investigation.
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**NR5- 28**

**CATATONIA WITH THYROID DYSFUNCTION: CASE REPORTS AND LITERATURE REVIEW**

*Lead Author: Malak Iskandar, D.O., M.B.A.*
*Co-Author(s): Andrew Francis, Ph.D., M.D., Ekaterina Stepanova, M.D.*

**SUMMARY:**

Background: The classic studies of Gjessing found hypermetabolism, catecholamine and thyroid abnormalities in catatonia and suggested thyroid hormone as a treatment. Later workers associated thyroid dysfunction with mood and psychotic disorders, but surprisingly few reports link catatonia defined by modern systematic criteria to thyroid disease. Objective: Summarize three catatonic episodes in two patients with active thyroid disease, report the treatment regimen, and review relevant literature. Methods: Case reports and MEDLINE literature search. Results: We identified three episodes in two patients where emergence of catatonia was linked to thyroid dysfunction. All episodes met DSM-IV and Bush-Francis criteria for catatonia. The effectiveness of lorazepam as a treatment was assessed. The first case was a 37-yr old female without formal psychiatric history. She presented with signs and symptoms of thyroid storm and hyperthyroidism-related catatonia, which included mutism, withdrawal and posturing. She received propothiouracil, potassium iodide and dexamethasone for hyperthyroidism and lorazepam [initially 2 mg IV, later up to 8 mg/d] for catatonia which resolved. The second case was a 22-yr old female without formal psychiatric history. She presented with signs and symptoms of hypothyroidism, status post total thyroidectomy, and hypothyroidism-related catatonia which included mutism, posturing, and severe withdrawal. She received levothyroxine for her hypothyroidism, nasogastric feeding, and lorazepam for catatonia [initially 0.5 mg IV QID and later 4 mg/d orally] with partial response. Soon after, she was given four bitemporal ECT for persisting catatonia and paranoid ideas with complete resolution. She was free of catatonia and psychosis thereafter. At age 37, she again developed fluctuating catatonia and psychosis associated with mild hypothyroid indices. She received levothyroxine and lorazepam [1-3 mg/d orally], and later risperidone [2 mg/d] with a good response. The literature review found 3 prior cases of catatonia with thyroid dysfunction. One patient with hypothyroidism was managed with reserpine and dessicated thyroid. One patient with Grave's disease was treated with thiamazole and diazepam, and in a later episode ECT with thiamazole and levothyroxine. Another third report of catatonia in a patient with thyrotoxicosis was confounded by use of haloperidol which itself can produce a catatonic reaction. Conclusion: The case reports and the literature suggest catatonia is associated with either hypothyroid or hyperthyroid states. In some cases benzodiazpines such as lorazepam and correction of thyroid status may resolve the catatonia, but ECT may be indicated where severe catatonic or co-existent psychotic symptoms compromise medical status.

**NR5-162**

**PREDICTING LENGTH OF STAY AMONG INPATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Marsal Sanches, M.D., Ph.D.*
*Co-Author(s): Teresa A. Pigott, M.D., Giovana Zunta-Soares, M.D., Alan C. Swann, M.D., Jair C. Soares, M.D., PhD*

**SUMMARY:**

Background: Length of stay has been regarded as an important measure of the relative cost-effectiveness of inpatient treatments for bipolar disorder (BD), therefore a better knowledge of the elements that may affect the length of stay in BD is of high interest. While several studies have addressed factors associated with increased length of stay among psychiatric inpatients, very few have specifically focused on bipolar inpatients. The present study analyzes the possible impact of different clinical features (assessed at admission) on the length of stay of patients with BD admitted to a psychiatric inpatient setting. Methods: the sample consisted of 247 inpatients who met DSM-IV-R criteria for BD (101 males, 146 females; 219 BD type I, 17 BD type II, 11 BD NOS; mean age + SD= 33.82 + 10.15 years). Clinical features present at baseline were obtained retrospectively, through review of electronic medical records. We performed multiple regression analysis, with length of stay as the dependent variable. Results: The mean length of stay in our sample was 9.40 + 5.17 days. Regression analysis [$R2=0.43$, $F(6,231)=8.41$, $p<0.01$] revealed that the presence of psychotic symptoms ($\beta= 0.29$, $p<0.01$) and involuntary status ($\beta= 0.14$, $p<0.05$) predicted longer length of stay, whereas comorbid personality disorder ($\beta= -0.13$, $p<0.05$) predicted shorter length of stay. On the other hand, no significant results were found in regards to history of suicidal attempts, mood state, and comorbid substance abuse. Conclusion: Our results suggest that, among bipolar inpatients, different clinical features seem to modulate length of stay independently. This knowledge may facilitate the identification of BD patients at high risk for elevated lengths of stay, allowing the early implementation of specific measures aimed at optimizing their management.
Key words: Bipolar Disorder, Hospitalization, Length of Stay, Treatment
Acknowledgments: This study was partially funded by Janssen Scientific Affairs, LLC.

**NR5- 30**

**THE CHANGE OF CORTICAL ACTIVITY INDUCED BY VISUAL DISGUST STIMULUS**

*Lead Author: Wook Jung, M.D.*
*Co-Author(s): Seung-Ho Ryu, Doo-Heum Park, Jae-hak Yu, Ji-HyeonHa*

**SUMMARY:**

Objectives: There are a lot of studies that analyze the interaction between the emotion of disgust and the functional brain images using fMRI and PET. But studies using sLORETA (Standardized low resolution brain electromagnetic tomography) almost do not exist. The aim of this research is to explore the relationship of the emotion of disgust and the cortical activation using sLORETA analysis.
Method: 45 healthy young adults (27.1±2.6 years) participated in the study. While they were watching 4 neutral images and 4 disgusting images associated with mutilation selected from the International Affective Picture System (IAPS), participant's EEGs

were taken for 30 seconds per one picture. Through these obtained EEG data, sLORETA analysis was performed to compare EEGs of neural and negative images.
Result: During looking for visual disgusting stimulus, all participants reported unpleasantness, arousal and stress. In sLORETA analysis the decrease of current density theta wave was shown at left frontal superior gyrus (BA10) and middle gyrus (BA10, 11). This voxel cluster consists of a total of 11 voxels and the threshold of T value indicating statistically significant decreasing of current density (P <0.05) was -1.984. There were no differences between male and female in comparing with the degree of being disgusted by using sLORETA analysis.
Conclusion: Decreased current density of sLORETA in theta wave was shown at left frontal superior and middle gyrus in disgusting stimuli. This finding may suggest that the activation of dorsolateral prefrontal cortex will be associated with regulating disgust emotion.

**NR5- 31**

**TRAIT ANXIETY PREDICTS RISK FOR DECREASED MEDICATION ADHERENCE IN PATIENTS WITH CHRONIC MEDICAL ILLNESS**

*Lead Author: Jyothsna Karlapalem, M.B.B.S.*
*Co-Author(s): Yvette Fuchter, MA, Nisha Ver Halen, Ph.D., Eri Kutoba, MA, Tzvi Furer, M.D., Varsha Narasimhan, M.D., Subodh Saggi, M.D., Daniel Cukor, Ph.D.*

**SUMMARY:**

Introduction: Non-adherence to prescribed medication is a major issue in all chronically ill patient groups. Predictors of adherence behaviors are multifaceted and include demands on patient's time, resources, and adverse effects of medications and severity of illness. However, an individual patient's beliefs about medication, current levels of anxiety and depression may also play a strong role in understanding medication taking behavior. The current study aims to explore the association between anxiety, depression and beliefs about medication with adherence in patients with end stage renal disease (ESRD), a progressive and demanding chronic medical illness.
Hypothesis: Increased levels of depression and anxiety will be associated with decreased medication adherence longitudinally in patients with chronic medical problems.
Methods: This study was conducted in patients with ESRD on hemodialysis at an urban inner-city hospital. The sample was predominantly African American and had multiple comorbid medical conditions including Diabetes Mellitus and Hypertension. Adherence to prescribed medications is the one of the keys for survival and decreased morbidity in this population. As part of a larger study, 57 patients with ESRD on hemodialysis completed several psychological measures including the State-Trait Anxiety Inventory, Beck Anxiety Inventory, Beck Depression Inventory, Belief about Medications Questionnaire (BMQ) and the Medication Adherence Rating Scale (MARS), a self-report measure of adherence. These measures were administered again after six months (n=50).
Results: At initial assessment, trait anxiety was significantly associated with elevated (BDI>15) depression (r =.51), beliefs about harmfulness of medications (r= .38) and specific concerns about medication (r = .32). Trait anxiety scores were associated with continued clinical depression at six months follow up (r = .51) and were also associated with worse adherence scores on MARS (r = -.47) Neither measure of acute anxiety symptoms, the State Anxiety or BAI, were found to have statistically significant association with medication adherence or depression scores at initial assessment or follow up.
Discussion: Patients with higher levels of trait anxiety are more likely to have elevated depression, more concerns about the safety of their medications, believe that medications are harmful, and ultimately have decreased adherence to medication over time. This pattern of associations appears to be specific to trait anxiety, suggesting that an anxious style, more than acute anxiety, may be associated with negative outcomes. While this study is correlational and directionality cannot be predicted, assessment of trait anxiety may be helpful in the identification of patients at particular risk for decreased adherence in the long term and would enable us to provide focused intervention to patients at greater risk.

**NR5- 32**

**LYME'S DISEASE WITH NEUROLOGICAL COMPLICATIONS MAY PREDISPOSE TO BIPOLAR DISORDER LATER IN LIFE**

*Lead Author: Jamsheed Khan, M.B.B.S., M.D.*
*Co-Author(s): Medhat Hamed, MS3; Waseem Khan,M.B.B.S; Asgar Hussain, M.D BRMC*

**SUMMARY:**

Background
Bipolar disorder is a common disorder causing multiple ER and inpatient admissions. Bipolar disorder is a multifactorial disorder and can be caused by a variety of causes, all of which must be considered before treatment. It has a genetic factor as it tends to run in families. It can also be due to neurological causes including brain structure and function abnormalities leading to dysfunction of neurotransmitters including norepinephrine, serotonin, and possibly many others. Environmental factors that can also cause Bipolar disorder. It can also be iatrogenic in origin due to prescribed medications.
Environmental factors contributing to Bipolar disorder are many. Of interest is the development of the disorder multiple years after experiencing Lyme disease caused by Borrelia burgdorferi transmitted by the Ixodes Tick. Up to 40% of patients with Lyme disease go on to develop neurologic involvement of either the peripheral or central nervous system. Psychiatric illnesses due to Lyme disease are broad and many have been associated including schizophrenia, bipolar disorder, depression, dementia, paranoia, panic attacks, obsessive compulsive disorder, and anorexia nervosa.
Objective
This case report is to illustrate that Lyme disease is a potential precipitant of Bipolar disorder in patients with no previous psychiatric illness.
Methods
A detailed, current literature review was completed and is included in this case report. A case report illustrating Bipolar disorder incidence in a patient with no previous psychiatric illness as a result of a previous Lyme disease.
Discussion
Research shows that Lyme disease is correlated to psychiatric illness including Bipolar disorder, the mechanism is unclear up to date. Even though the patient had the disease (# of years prior) ago, it is well documented that Lyme disease may have a latency period of moths to years before the symptoms of late infection emerge, including psychiatric illness. Early signs on

the disease include meningitis, encephalitis, radiculoneuropathies, and cranial neuritis. Encephalopathy and encephalomyelitis can occur later.
Conclusion
Psychiatrist who work in the ED need to include Lyme disease in their deferential diagnosis of any atypical psychiatric disorder. However, further research is needed to identify better laboratory tests and to determine the time course of development of the disease and the length of treatment among patients with neuropsychiatric development.

**NR5-33**
**LITHIUM-INDUCED GALACTORRHEA IN A 27 YEAR OLD FEMALE**
*Lead Author: Jamsheed Khan, M.B.B.S., M.D.*
*Co-Author(s): Christopher Price MSIII, Avinash Kudupudi MSIII*

**SUMMARY:**
Objective:
The purpose of this case report is to describe galactorrhea as an adverse effect of Lithium pharmacotherapy in a patient with Bipolar NOS. Moreover, possible mechanisms of action responsible for producing galactorrhea is proposed along with an alternative treatment plan based on best scientific evidence in such a case.
Methods:
An exhaustive review of previous, as well as, current literature was performed and results were incorporated into this case report. A case report detailing lithium treatment for Bipolar NOS resulting in elevated prolactin levels and galactorrhea.
Case:
The patient is a 27 year old Puerto Rican female, unemployed, having some college education, living with her boyfriend of 1 year. She has a 5 year history of Bipolar NOS, Episodic Mood Disorder, and Cannabis Dependence. She was first identified after a failed suicide attempt in 2007, and she has had 1 subsequent attempted suicide in 2010, both attempts culminating with in-patient hospitalization. She was prescribed lithium as a mood stabilizer after her first attempted suicide. She reports a strong compliance with medication, but she indicates that her medication is causing her to produce and let down breast milk despite never being pregnant. As a result of galactorrhea the primary care physician lowered her dosage of lithium to a level that she no longer complains of breast milk production. However, she reports that shortly after cessation of milk production her symptoms of Bipolar began to surface resulting in a second failed suicide attempt during 2010. At that time her lithium dosage was again increased until the symptoms of Bipolar were no longer evident, but at that time she began to report that milk production and let down had resumed. In 2011 the patient complained of breast tenderness and at that time the decision was made to slowly begin downward titration of her lithium dosage.
Currently, the patient is presenting to the Emergency Room complaining of depressed mood and feelings for the past 2 days. She denies any suicidal or homicidal ideation. She denies any changes in appetite, sleep habits, and visual/auditory hallucinations. She denies any manic symptoms, or anxiety. She admits to using cannabis continually on an average of 3 joints a week for the past several years. She was ordered to drug rehab in 2010 after her second suicide attempt.
Upon admission to the Emergency Room the patient's vital signs were within normal limits. Urine toxicology was positive for THC at 84, and negative for alcohol less than 25 BAL. Beta hCG was nonreactive. Her TSH level was 5.2, free T4 was 0.66, and prolactin was 34.0. Lithium was 0.6,

**NR5- 34**
**VIRTUAL REALITY TREATMENT PROGRAM FOR INDIVIDUALS WITH EXCESSIVE ONLINE GAME PLAY**
*Lead Author: Youngin Kim, M.D.*
*Co-Author(s): Doug Hyun Han, M.D., Ph.D.*
*Young Sik Lee, M.D., Ph.D., Kyung Joon Min, M.D., Ph.D., Chul Na, M.D., Ph.D., Sung Yong Park, M.D., Ph.D.*

**SUMMARY:**
Introduction
In several fMRI studies, cortico-striatal-limbic circuit was reported to respond to online game stimulation in both healthy game users and patients with excessive or pathological online game play. However, recent studies suggested that there was different brain volume within cortico-striatal-limbic circuit between healthy users and pathologic game players. Current research assessed the connectivity of cortico-limbic circuit in pathological online game players. In addition, we hypothesized that virtual reality therapy would improve the connectivity of cortico-limbic circuit in pathological online game players.
Methods
We recruited 36 participants through On-line Clinic Center in Chung-Ang University Hospital. Twenty four adults with pathological on-line game play and 12 healthy game users were recruited in the study. Resting simple functional MRI data were acquired using a 3.0 T Philips Achieva 3.0 Tesla TX MRI scanner (Philips, Eindhoven, the Netherlands) using an 8 channel Sense head coil. For assessment of pathological on-line game use problem, Kimberly Young Internet Addiction Scale was administered to all subjects. Twenty four patients have randomly classified into two groups; 12 patients with cognitive behavior therapy group (CBT) and 12 patients with virtual reality therapy group.
Results
Both CBT group and virtual reality therapy group showed statistically significant reduction of internet addiction scale scores. However, there was no significant difference between two groups. In posterior cingulate cortex seed base resting fMRI analysis, the connectivity of cortico-striatal-limbic circuit in patients with pathologic online game play has decreased, compared to that observed in healthy users. After 8 sessions CBT, the connectivity within bilateral lenticular nucleus-cerebellum connectivity has increased in patients with CBT group. After 8 sessions of virtual reality therapy, the connectivity of left thalamus-frontal lobe-cerebellum has been increased in patients with virtual reality therapy group. As a result, treatment of game addiction with virtual reality recovered clinical condition of game addiction, which shows similar effectiveness as the offline CBT, and seems to enhance the balance cortico-striatal-limbic circuit in patients with online game play.
Discussion
Although this research had limitation on size and preceding researches, it showed possibility that virtual reality therapy program can be significantly used on various addictions treatment and also, it showed that this program can reduce the

social-economical costs for treatment and prevention of game addiction. In addition, this research gave an important opportunity to develop new technology by combining psychiatric treatment and IT technology.

**NR5-35**

**TRANSIENT REMISSION OF PSYCHOSIS IN A SCHIZOPHRENIA PATIENT SECONDARY TO A MEDICATION INDUCED SEIZURE**

*Lead Author: Bassem Krayem, M.D.*
*Co-Author(s): Norma Dunn M.D., Ronnie Swift M.D.*

**SUMMARY:**

Introduction:
ECT (electro convulsive therapy) has been described in literature to be effective for treating mood and refractory psychotic disorders. The greatest therapeutic benefit appears to occur when it is administered concurrently with antipsychotic medications. (1, 2)
Case Report:
We report a case of a 63 year old Caucasian female who was diagnosed of Schizophrenia since age 19 and has comorbid arthritis, hypertension, hyperlipidemia and cardiac disease treated with an intracardiac defibrillator. She has no history of Seizure Disorder and no known family history of seizures. Patient has had multiple psychiatric admissions to the state hospitals because of continued psychosis despite multiple trials of medications. During this admission, she was hospitalized for more than 2 months because of persistent psychotic symptoms. She was placed on Clozapine in combination with Aripiprazole and Bupropion with poor control of her psychotic symptoms. She was hearing voices telling her that she is evil and she should die. She also had paranoid delusions about being around people and she was depressed. ECT was recommended and the patient initially agreed. While on the unit pending transfer for ECT, she had a generalized tonic clonic seizure with transient loss of consciousness. She was transferred to the medical floor for evaluation. Her neuroleptic medications were discontinued for one week. Her routine laboratories were unremarkable and head CT (computerized tomography) showed bilateral periventricular atrophy. Her EEG (electro encephalogram) showed intermittent left posterior parietal slowing consistent with cortical dysfunction. The patient had no further seizures and she was transferred back to the Psychiatric unit and was observed to have significant improvement in her thought processes and behavior. She was seen reading a book and reported no hallucinations and no delusions were elicited. She was discharged on Aripiprazole 20 mg a week later.
Discussion:
Our case report describes a transient remission of psychotic symptoms after a tonic clonic seizure. The patient had no history of seizure disorder. Her epileptic episode was most likely secondary to her psychotropic medications lowering her seizure threshold.
Conclusion:
Our case report highlights that ECT should be considered who have not responded to antipsychotic medications. In this patient a medication induced seizure produced remission of psychotic symptoms. This might suggest that ECT might have been effective.

**NR5-36**

**N-METHYL-D-ASPARTATE RECEPTOR (NMDA-R)-IGG AUTOIMMUNITY IN A PSYCHIATRIC CONTEXT**

*Lead Author: Jennifer L. Kruse, M.D.*
*Co-Author(s): Vanda A. Lennon MD, PhD, Maria I. Lapid, MD, Orna O'Toole, MD, Sean J. Pittock, MD, Mark A. Frye, MD, Andrew McKeon, MD*

**SUMMARY:**

Introduction: NMDA-R-IgG (targeting GluN1) is a biomarker of autoimmune encephalitis with prominent psychiatric symptoms but is controversial as a marker of primary psychiatric disorders.
Hypothesis: NMDA-R-IgG is detectable in psychiatrically hospitalized patients undergoing paraneoplastic evaluation.
Methods: Two patient groups were tested for NMDA-R-IgG by both tissue immunofluorescence and cell-based assays. Group 1, 260 psychiatrically hospitalized adult Mayo Clinic patients for whom paraneoplastic evaluation of serum was requested (2002-2011). Median hospitalization age was 63 years (range, 18-96); 55% were women. Serum was available for all, and CSF for 10. Group 2, all 1082 Mayo Clinic Rochester patients in whom NMDA-R-IgG testing was specifically requested (2009-2013). Median age, 44 (range, 1-96), 50% were women.
Results: Group 1, NMDA-R-IgG was detected in neither serum (0/260) nor CSF (0/10). Diagnoses were: mood disorder (149, 51 had psychotic features), cognitive disorder (57), psychotic disorder (40), anxiety disorder (7), conversion disorder (6), and substance use disorder (1). Group 2, NMDA-R-IgG was detected in 12 patients (1%). Median symptom-onset age was 25 years (range, 14-49), 11 (92%) were women. NMDA-R-IgG was detected in CSF of 11 patients (but not in serum in 5); all had inflammatory CSF supportive of encephalitis (≥1 of leukocytosis, elevated protein or CSF oligoclonal band number). Psychiatric symptoms among those 11 patients were: agitation (9), depression (8), disorganized behavior (8), psychosis (8), catatonia (8), anxiety (7), hypomania/mania (4), suicidal ideation (3), suicidal gesture or attempt (2). Psychiatric hospitalization occurred prior to encephalitis diagnosis in 7/11 patients. Neurological disorders included seizures (7) and disorders of: cognition and language (all 11), movement (7), strength and sensation (1). Neoplasia was identified in 1 patient only; she had coexisting voltage-gated potassium channel-complex and striational antibodies, and small cell lung carcinoma. All 11 encephalitic patients received immunotherapy: 9 improved, 2 deteriorated, and 1 died. Four patients relapsed (median time to relapse was 13.5 months, range 6-96). NMDA-R-IgG was detected in serum by cell-based assay only in the twelfth patient. She had chronic depression, fibromyalgia, and non-objectified memory complaints without encephalitis (CSF protein and white cell count were normal).
Conclusions: The frequency of NMDA-R autoimmunity in primary psychiatric disorders is likely low, but specimen availability was limited by physician ordering (older patients, infrequent CSF testing requests). Prospective studies may elucidate further. NMDA-R autoimmunity was encountered in young patients with subacute psychiatric and neurological symptoms. Sensitivity of stand-alone NMDA-R-IgG serum testing is low. For patients with suspected autoimmune neuropsychiatric disorders, evaluation of both serum and CSF is critical.

**NR5- 37**

**INTENSIVE TREATMENT OF COMBINING FAMILY-BASED PSYCHOTHERAPY AND PHARMACOTHERAPY FOR ADOLESCENTS WITH ANOREXIA NERVOSA IN OUTPATIENT SERVICE IN TAIWAN**

*Lead Author: Chunya Kuo, M.D.*
*Co-Author(s): Yen-Nan Chiu, M.D., Vincent CH. Chen, M.D., Ph.D., Susan SF. Gau, M.D., Ph.D., Chi-Yung Shang, M.D., Ph.D., Wen-Che Tsai, M.D.*

**SUMMARY:**
Introduction: Anorexia Nervosa (AN) is a difficult-to-treat disorder that disrupts normal development and causes major physical and psychosocial disability. AN most often has its onset in adolescence and is more prevalent among adolescent females. It also takes several efforts and long period of time to treat patients with AN. In western studies, it takes around 4-24 weeks for patient to regain the normal body weight. Here, we present our experiences in outpatient service using the combination of family-based psychotherapy and pharmacotherapy.
Case reports:
[Case 1] The 14.8 years-old girl had developed strong will for thinner and her body weight (BW) decreased in six months; with her BW being 31 kg, body mass index (BMI) 12.4, secondary amenorrhea and depression. It took 8 weeks for her BW to restore to 94% of normal BW. The antidepressant monotherapy was applied from 2nd to 36th week. The intensive family-base psychotherapy performed to 36 weeks with both her parents.
[Case 2] The 15 years-old girl had gradually decreased BW, amenorrhea, and rigid thoughts of keeping thin since past twelve months. The first evaluation showed 30.8 kg and 12.9 for the BMI. It took 12 weeks/sessions to 90% of normal BW. The combined pharmacological of antidepressants and antipsychotics was applied at first to 12th week; the monotherapy of antidepressants was applied during the 13th to 24th weeks. Only her mother had time to join the intensive family-based psychotherapy until 48 weeks.
[Case 3] The 16 years-old girl had gradually decreased BW, amenorrhea since past six months. The first evaluation showed 28 kg and 12.4 for the BMI. It took 6 weeks/sessions to 87.5% of normal BW. The combined pharmacological of antidepressants and antipsychotics was applied at first to 6th week. Only her mother had time to join the intensive family-based psychotherapy until 6 weeks.
[Case 4] The 12 years-old girl had gradually decreased BW, amenorrhea, poor self esteem, and great family conflicts for twelve months. The first evaluation showed 32 kg and 13.14 for the BMI. It took 4 weeks/sessions to 92.1% of normal BW. The combined pharmacological of antidepressants and antipsychotics was applied at first to 4th week, and then monotherapy of antidepressants was applied until 24 weeks. Both her parents join the intensive family-based psychotherapy until 24 weeks.
Conclusion: The successful treatment of these four cases implies the effectiveness of family-based outpatient treatment for Taiwanese adolescents with AN also as which in west countries, and it took average 7.5 weeks for them to regain weight. The shorter time for restore weight may correlate to onset age and the influence or attendance rate of family members, especially the mother. Further analysis of associated factors, such as medical effects, the eastern mother's role and influence is important. To shorten the period of regaining weight is significant for patients and their family in treatment of AN.

**NR5- 38**

**PRESCRIBING PREFERENCES OF ANTIPSYCHOTIC MEDICATIONS IN THE TREATMENT OF SCHIZOPHRENIA IN SINGAPORE**

*Lead Author: Cecilia Kwok, M.D.*
*Co-Author(s): Ee Heok, Kua, MBBS FRCPsych, Rathi, Mahendran, MBBS MMed (Psych), Keng Chuan, Soh, MBBS*

**SUMMARY:**
Aim: Antipsychotics are crucial to schizophrenia treatment compliance and illness recovery, before complications associated with chronicity set in. With typical and atypical antipsychotics available in both oral and long-acting injectable formulations (LAIs), there is diversity of treatment choice. This study seeks to better understand the antipsychotic prescribing practices in treatment of schizophrenia by psychiatrists and psychiatry residents in Singapore.
Methods: A survey was conducted, with clinical vignettes depicting a schizophrenic patient at various stages of illness with a questionnaire on clinician's choice and rationale for type and modality of treatment. The study had ethics approval.
Results: A total of 74 psychiatrists and psychiatric trainees participated in the survey, with participation rate of 42%. Of these, 51.4% were male; 60.8% were registered specialists while 39.2% were residents; 62.2% worked in general hospitals, 32.4% at the tertiary psychiatric hospital and 5.4% in private practice. At initial presentation of schizophrenia, all respondents would prescribe oral antipsychotics, with 85.1% selecting an atypical. Those in tertiary psychiatric practice were more likely to prescribe typical antipsychotics ($p<0.001$). Main concerns at this stage were side-effects (86.5%) and clinical efficacy (59.5%). At first relapse following recovery from the initial episode, 74.3% chose oral atypicals while 17.6% switched to LAIs (7 typical and 6 atypical). For maintenance treatment after the first relapse, preference was in the order of oral atypical (45.9%), typical LAIs (33.8%), atypical LAIs (10.8%) and oral typical (9.5%). For treatment of recurrent relapses, 45.9% still opted for oral atypicals, with 36.5% selecting LAIs (20 typical and 7 atypical), 9.5% selecting combinations of oral and LAIs, and 9.0% selecting oral typicals. In the maintenance phase, 93.2% of respondents switched to LAIs (50 typical and 19 atypical), with clinical efficacy the most cited reason. Only 8.3% of respondents from the tertiary psychiatric hospital chose atypical LAIs compared to 30.4% from general hospitals. With illness progression from first episode relapse from non-adherence and re-hospitalization, concerns about side effects gradually shifted to treatment adherence. Only 33.8% of respondents and significantly those in tertiary psychiatric hospital practice ($p=0.028$) routinely offered patient choice between oral and LAIs.
Conclusion: Initial treatment choice for schizophrenia in Singapore is oral atypical antipsychotics, with few choosing LAIs for treatment non-adherence. Significant differences in prescribing were also related to level of experience and type of practice. This study was able to determine antipsychotic prescribing practices to provide an understanding of care delivery. Underutilization of LAIs and lack of patient choices in treatment decisions pose concerns and highlight the need for standardization of practice.

**NR5-39**

**BODY IMAGE, BEAUTY IDEALS AND DISORDERED EATING IN**

**YOUNG ADULT FEMALES: AN ETHNIC PERSPECTIVE**

*Lead Author: Simone Lauderdale, M.D.*
*Co-Author(s): Lisa J. Cohen, Ph.D.*

**SUMMARY:**
Introduction: Studies assessing eating disorder prevalence rates and body image in American society often use Caucasians as the studied population. While much research has been aimed at disordered eating in Caucasian populations, disordered eating in African American adolescents and young adults is far less studied. Currently rates of eating disorders in young African American females are less than in their Caucasian counterparts, but the factors leading to these discrepancies deserve further study. This study compares beauty ideals, body satisfaction ratings and disordered eating in young African American females vs. their Caucasian American counterparts.
Methods: An 81 item questionnaire linked to the Surveymonkey.com website was disseminated to U.S. college and postgraduate aged Caucasian and African American females. Participants were comprised of the principal investigator's college graduate contacts and then distributed to their contacts virally. The questionnaire included body image ratings, body satisfaction ratings, and eating behavior ratings compiled from the following rating scales: the Questionnaire on Eating and Weight Patterns-Revised (QEWP-R), the Body Shape Questionnaire (BSQ-34) and the Beauty Ideals and Body Image Questionnaire (BIQ-Designed for this study).
Results: 96 participants, 57 Caucasian (C) and 21 African American (AA) were recruited. AA and C participants were well matched in areas of age, weight, height and education. C participants were marginally more likely to binge than AA participants (52.0% vs. 28.6%, p=0.070). C participants rated thinner figures in the BIQ scores as marginally more attractive than did AA participants (5.08 vs. 4.56, p=0.06), while AA participants rated the heavier figures as significantly more attractive than did C participants (5.56 vs. 5.08, p=0.03). C participants also selected a significantly thinner body size as the thinnest that was still attractive compared to AA participants (3.28 vs. 3.90, p=0.02). C participants also reported non-significantly higher body dissatisfaction rating scores compared to AA participants (67.9 vs. 63.5, p=0.28). AA participants were significantly more likely to report being overweight either as child or as an adult (57.1 % vs. 27.9%, p=.024).
Discussion: Our study showed that in a non-clinical group of women with similar education levels, AA women displayed less disordered eating and more frequently reported being overweight. These findings may be related to differences in beauty ideals, as AA women rated heavier models as significantly more attractive than C women, and C women selected a significantly thinner body size as still attractive compared to AA women. These findings are consistent with current binge eating disorder statistics in AA vs. C women, and could inform clinicians when assessing cultural differences and their effects on weight disparities when treating patients of various cultural background.

**NR5-40**

**IMPLEMENTATION OF NARRATIVE MEDICINE IN A VETERAN SYSTEM OF CARE**

*Lead Author: Elliot R. Lee, M.D., Ph.D.*
*Co-Author(s): Eileen P. Ahearn, MD, PhD, Dean D. Krahn MD, MS, and Thor S. Ringler, MFA, MS,*

**SUMMARY:**
Narrative medicine is an extension of tradition of the fields of humanities and ethics. Its goal is to bring narrative competence to the practice of medicine to help providers recognize, interpret, and be moved to action by the predicaments of others. The field of narrative medicine in part tries to humanize the doctor-patient relationship which for decades has been dominated by a more rigid medical model. Previous work has shown the benefit of this approach in both internal medicine and psychiatry. We have implemented concepts of narrative medicine in both inpatient and outpatient settings in our local Veterans hospital and clinics. This was done by formation of a 'narrative medicine' team, consisting of clinicians from various disciplines whom also had previous training in creative writing. We then collected patient narratives that could be accessed by current and future providers as part of the electronic medical record. These narratives were written and edited by the patients themselves with the assistance of the team. The goal was to help facilitate an understanding of the patient with information that would not typically be found 'in the chart.' Patients and providers were then surveyed to help assess benefits of the program. The program has collected 175 narratives. 86% of veterans felt that the story they developed was a helpful part of their care. Nearly 80% of providers utilized the patient narrative and found it helpful in providing care. In addition, the patient narrative process became part of the initial workup for transplant patients. This concept has been met with great enthusiasm in the community, with articles in local and national newspapers, volunteers from the community to join in on helping with the narrative work, and workshops taught at other area hospitals. Further study is needed to elucidate the benefits of this approach in strengthening a patient-centered model of care.

**NR5-41**

**DEMENTIA LITERACY AMONG CHINESE AMERICANS: FAMILY HISTORY OF DEMENTIA ONLY MARGINALLY IMPROVES UNDERSTANDING OF THE DISEASE**

*Lead Author: Jason P. Lee*
*Co-Author(s): Benjamin K. Woo, M.D.*

**SUMMARY:**
BACKGROUND: Public awareness and research in dementia have increased in recent years as the incidence of various forms of dementia has increased due to population aging. Although the etiology of dementia is varied, inheritance plays an important role: having close relatives with dementia is associated with an increased risk of dementia and Alzheimer's, especially when specific genotypic risk factors are present. Individuals with a family history of dementia are also more likely to seek professional help. Studies on the Chinese American population have demonstrated low literacy regarding dementia etiology and symptoms, which contributes to their low utilization of mental health services. In the present study, we aim to determine whether having a family history of dementia is associated with an increased knowledge of the causes and symptoms of dementia in a Chinese American population.
METHODS: We distributed paper survey questionnaires written in Chinese to individuals fluent in Chinese. Participants were recruited from among Chinese American attendees at aging semi-

nars in Southern California. The survey consisted of 11 true (T) or false (F) statements regarding dementia symptoms, causes, treatment, and prognosis. The number of correct answers was directly correlated to dementia knowledge. Demographic variables including family history of dementia were self reported. Descriptive statistical analysis was performed using SPSS; t-test and Chi-squared were used to interpret data. Significance was defined as $p<0.05$.
RESULTS: Of the 316 participants who responded, 70 (22%) had a family history of dementia (FHD) and 246 (78%) did not. Overall, no significant difference was observed in the total score between the two groups. Participants with FHD scored a mean (SD) of 6.51 (1.67) correct answers, while the non-FHD group recorded a mean (SD) of 6.33 (1.70). However, a significant difference ($p<0.01$) was noted on Question 9, which identifies cerebrovascular disease as a risk factor for certain forms of dementia. Individuals with FHD were more aware of this association compared to those without FHD (45.7% vs 29.3% correct). There was no significant difference in accuracy between the two groups on any other individual questions.
CONCLUSION: Overall, having a family history of dementia did not measurably improve knowledge of the disease. However, participants with FHD were better at identifying cerebrovascular disease as a potential cause of dementia. Since cerebrovascular disease can be mitigated by treatment and preventive lifestyle changes, individuals with this form of dementia are likely to undergo treatment. As such, their relatives will be more aware of the etiology of this form of dementia. Our results reveal a pressing need for greater dementia education in this demographic to lift literacy as well as further research to determine how FHD individuals have a greater understanding of the link between cerebrovascular disease and dementia.

**NR5-42**

**DOUBLE-DISSOCIATION BETWEEN DORSAL-ATTENTION AND DEFAULT-MODE NETWORK RECRUITMENT IN SCHIZOPHRENIA DURING INCONGRUENT STROOP PROCESSING**

*Lead Author: KaWai Leong, M.D., M.Sc.*
*Co-Author(s): Katie Lavigne, M.Sc., Todd Woodward, Ph.D.*

**SUMMARY:**

Introduction
During the performance of a task, increases in activation of the dorsal attention network (DAN) and in deactivation of the default-mode network (DMN) have been reported. This "anti-correlation" between the DAN and DMN tends to exacerbate with increasing task demand. In patients with schizophrenia, previous studies suggest dysfunction in regulating activity in both the DAN and DMN during performance of a task. However, the inter-relationship between activity in the DAN and DMN in the resolution of increasingly difficult cognitive tasks in schizophrenia remains elusive.
Methods
In the present study, we investigated the interplay between the DAN and DMN in schizophrenia patients and healthy controls during the performance of a Stroop task. Thirteen patients with schizophrenia and thirteen healthy controls performed a modified Stroop test, including alternating conditions of neutral and incongruent colour and word naming, while undergoing fMRI.
Results
Functional connectivity analysis indicated that although schizophrenia patients demonstrated higher activity across both networks relative to controls during incongruent trials, they appeared to show a stronger reliance on activation of the DAN than controls, who in turn appeared to depend more heavily on deactivation of the DMN, during incongruent trials. There was no significant behavioural group differences.
Discussion/Conclusion
Given the lack of significant behavioural group differences, these results support the notion of decreased cortical efficiency in schizophrenia, but extend these findings by suggesting that schizophrenia patients may rely on hyperactivation of the DAN to compensate for an inability to sufficiently deactivate the DMN during challenging tasks.

**NR5-43**

**PATIENT ASSESSMENT OF THE UTILIZATION OF DIAGNOSTIC QUESTIONNAIRES**

*Lead Author: Kenny Lin, B.S.*
*Co-Author(s): Jon-Michael A. Saenz, B.S., Charles D. Hanson, M.D., J.D.*

**SUMMARY:**

The objective of this survey study was to explore patients' views on diagnostic questionnaires as a means of psychiatric evaluation and diagnosis. It was hypothesized that patients have a favorable preference towards questionnaires, especially those that provide more detailed answer choices. A total of 27 psychiatric patients were evaluated: 11 males and 16 females, met in various mental health clinics in the greater New England region and whose ages ranged from 22 to 82. They were given sample diagnostic questionnaires (PHQ-9, MDQ, QIDS) to look over before answering the survey questionnaire (SQ) designed for the study. The items in the questionnaire were aimed at specific elements of the questionnaires such as question and answer length and efficacy. Items in the questionnaire ranged on a Likert-type scale of 1 (Strongly Agree) to 5 (Strongly Disagree) and were reversed scored as need. A control group of 25, not belonging to any psychiatric practice and without any diagnosed psychiatric condition, was subjected to the same conditions. Results from the experimental group show that there is an overall neutral stance towards questionnaires with a small tendency to favor shorter questionnaires and their utility as a diagnostic tool.

**NR5- 44**

**ALCOHOL WITHDRAWAL TREATMENT IN THE MEDICALLY HOSPITALIZED PATIENT: PREDICTORS FOR MEDICAL OR PSYCHIATRIC COMPLICATIONS**

*Lead Author: Austin Lin, M.D.*
*Co-Author(s): Grace Chang, M.D., Janet Shu, M.D.*

**SUMMARY:**

Introduction: Unhealthy alcohol use is associated with serious medical illness [1] and complicated hospital stays [2]. Since 20-50% of hospitalized patients report alcoholism [3], and 42% of veteran inpatients have required medications for detoxification [4], optimizing alcohol withdrawal treatment is imperative. Clinicians have difficulty triaging patients to appropriate detoxification settings and identifying features that increase risk of complications. Furthermore, though benzodiazepines are first-line for symptom management and prevention of

delirium tremens and seizures [5], its ideal administration remains controversial. Studies comparing symptom-triggered, fixed-dose, or loading methods include their exclusion of medically complicated, psychiatric, or multi-substance abusing patients thus limiting generalizability of findings [6]. This study compares the outcomes associated with various strategies of benzodiazepine administration without any exclusion criteria to elucidate which features of patients are better predictors for complications. Methods: A retrospective chart review of 47 veterans consecutively admitted to a tertiary veteran's medical hospital for alcohol detoxification. Demographics, blood alcohol level (BAL), Charlson comorbidity index (CCI), CIWA score on admission, drinks per drinking day, pre-psychiatry consult benzodiazepine administration, and length of stay were compared for veterans who developed complications versus those who did not. Results: 21% patients experienced significant complications during their medically managed detoxification, including behavioral dysregulation and delirium tremens. Compared to veterans without such complications, more of these patients had an initial CIWA score ≥15 (50% versus 3.5%, p=0.005). Patients who received benzodiazepines prior to psychiatric consultation had more complications than those medicated after consultation (80% versus 46%, p = 0.08). The groups did not differ significantly with respect to age, admission, BAL, CCI, or length of stay. Conclusion: The single best predictor of complications during medically managed detoxification from alcohol was an initial CIWA score ≥15. If present, the odds of a complication were increased 28-fold (95% CI =2.5, 317.6). This may help physicians to triage patients to higher levels of care (ICU or PCU) based on CIWA score. Also, patients who received benzodiazepines prior to specialist consultation tended to have more complications. We recommend strict adherence to CIWA protocol and earlier consultation of specialists for patients experiencing alcohol withdrawal.

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2. O'Brien JR JM et al. Crit Care Med.
3. Moore RD et al. JAMA 1989
4. Tracy SW et al. U.S. Department of Veterans Affairs, Veterans Affairs Health Care System, Program Evaluation and Resource Center; 2004.
5. Ntais C et al. Cochrane Database Syst Rev 2005.
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**NR5-46**

**COPING STYLES AND FUNCTIONAL DISABILITY IN BIPOLAR PATIENTS**

*Lead Author: Mona M. Maaty, M.D.*
*Co-Author(s): Lisa Cohen, Ph.D., Igor Galynker, M.D. Ph.D., Fumitaki Hayashi, M.D. Ph.D., Allison M.R. Lee, M.D., Deimante McClure, B.A.*

**SUMMARY:**

Introduction: Several studies have demonstrated that bipolar patients' ability to cope adaptively can have a significant impact on the course of the illness. Adaptive styles have been associated with fewer relapses and increased time to next manic episode. We sought to determine if coping styles adopted by patients correlated with the level and type of disability experienced by bipolar patients. We compared different coping styles used in bipolar patients, their caregivers, and in healthy controls. Then, patient coping styles were compared to specific domains of disability to determine if there is a correlation.
Methods: Patients diagnosed with Bipolar Disorder by SCID-P were recruited from the Family Center for Bipolar in New York City as part of a larger study of Family-Inclusive Bipolar Treatment. At study intake, coping styles in the patient, caregiver, and control groups were assessed using the Brief COPE measure. Also, patients completed the Sheehan Disability Scale (SDS) which measures work/school impairment, social life impairment, and family life/home responsibility impairment. Those patient coping styles that were significantly different from the other groups were compared with the different domains of the SDS using Pearson correlation.
Results: Twenty-one patients, 22 caregivers and 24 healthy controls were recruited. Patients were diagnosed with Bipolar I (50.0%), Bipolar II (40.9%) and Bipolar NOS (9.1%). The difference between patients and healthy controls in behavioral disengagement was highly statistically significant ($p<0.0005$) with patients engaging more in behavioral disengagement than control. Also, patients used behavioral disengagement significantly more ($p=0.002$) than caregivers. There was a highly statistically significant difference between patients and caregivers and between patients and controls ($p<0.0005$) with patients using self-blame more than the other two groups.
The comparison between coping styles and SDS in the patient population demonstrated a significant inverse correlation between self-distraction coping style and social life impairment ($p=0.009$). There was a significantly positive correlation between behavioral disengagement and work/school impairment, family life/home responsibility impairment and global functioning ($p=0.002$, $p=0.006$, $p=0.001$, respectively). There was a significant correlation between self-blame and global functioning score ($p=0.003$).
Discussion: The present data supports that behavioral disengagement coping and self-blame style are correlated with disability. Behavioral disengagement was the most correlated with global disability followed by self-blame. Interestingly, that self distraction is inversely correlated with social life impairment is a unique finding. These results could help clinicians formulate individualized treatment goals with a component to include transitioning a patient from maladaptive to adaptive coping styles.

**NR5- 47**

**INSULIN HABITUATION AND SOCIOPATHIC BEHAVIOR**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): G. Ali Rahmani, MD*

**SUMMARY:**

Objectives:
The objective of this case study is to highlight the difference between drug dependence and habituation.
Background:
Drug dependence has increased in the recent years which are also correlated with increased availability of drugs. Terminological confusion has been increased in the current literature by the introduction of a variety of new terms and redefinitions of old ones. Confusion can be avoided only by paying attention to the substantive distinctions rather than to the terminology in which they are expressed.
Case Description:
This is a case of 32 year old AAF who was transferred to psych

unit after medical clearance from Medical floor. She was admitted there secondary to hypoglycemia coma. Patient stayed calm during his hospital stay with no behavioral disturbance. Denied having any depressive symptoms and psychotic symptoms. He was discharged to home. Patient re-admitted next month with similar presentation, found down by EMS on the street and found to have hypoglycemic coma. During this stay in the psych hospital, she was AAO times three with no psychosis or memory disturbance. She was agitated in the unit multiple times, required chemical restraints, picking up fights with other patients. She was also splitting among staff. Investigations on this time showed that she was not diabetic, but she kept on insisting to have insulin which make her feel, ''good''. No withdrawal symptoms were observed in the unit. She was diabetic 5 years ago and was on insulin at that time. At this time she was not delusional about having diabetes but continued to insist on getting insulin which was refused. She had used multiple drugs in the past and had extensive legal history.
Conclusion:
This case illustrates that sociopathic behavior was there from her early age which later developed in the habit of taking drugs, particularly insulin injection. All her labs have shown that she is not diabetic but she continue to take insulin and managed to get it from somewhere. She has put herself in danger of losing her life by self-induced hypoglycemia. Drug addiction is a state of acute or chronic intoxication results from repeated consumption of drugs. Habituation differ from addiction by 1) There is a desire but not compulsion of taking drug, 2) Little or no tendency to increase the dose, 3) Some degree of psychic dependence but no physical dependence, 4) Detrimental effect, if any, primarily on the individual. There is not much literature available on Habituation which needs to be explored.

**NR5- 48**

**PSYCHOSIS IN PATIENT WITH EPILEPSY-ATYPICAL PRESENTATION**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): Natalia Ortiz, MD*

**SUMMARY:**
OBJECTIVE:
The objective of this case study is to highlight the importance of atypical presentation of epilepsy. Patient should be thoroughly evaluated which is important for proper management.
INTRODUCTION:
Association between psychosis and epilepsy has already been established. Seizure may present as non-convulsive behavioral disturbances ranging from subtle alteration of behavior to psychosis. Prevalence of psychosis among patient with epilepsy has been reported as from 8% to 40%. Careful assessment of these patients who does not have history of seizure and psychosis is very important which warrant proper management.
CASE REPORT:
53 year old lady with history of depression brought in by her family with complaint of headache for 1 week with, ''fire work on both eyes''. The day, she was brought in to the hospital she was confused in the morning. She started screaming and became agitated afternoon same day. She became paranoid about her family members. In the Medical floor she became agitated and, ''leave me alone, tried to leave the hospital. She was given haloperidol 5mg and lorazepam 2 mg IM . Psych was consulted to make assessment for psychosis. Patient did not have any previous history of psychotic/bizarre behavior. She does have history of depression but remained non-complaint with her medications. Necessary investigations were performed including EEG and LP. Her LP was negative but EEG was grossly abnormal. She was later transferred to Neurology unit for continuous EEG monitoring. She was started on Phenytoin which she responded very well. She was finally discharged with follow up appointments with both neurology and psychiatric clinic.
CONCLUSION:
This case clearly illustrates the importance of careful assessment of patients who does not have history of seizure and psychosis, which warrant proper management. Epilepsy is a chronic brain disorder which affects approximately 50million people worldwide. Population based studies shown that epilepsy is associated with an increased prevalence of mental health disorders when compared to general population. This may leads to problems in terms of differential diagnosis among the two. Also type and phase of epilepsy is important to determine. Postictal psychosis frequent and potentially dangerous complication within the course of temporal lobe epilepsy.

**NR5- 49**

**RISPERIDONE-ASSOCIATED, TRANSIENT VISUAL DISTURBANCES: A CASE REPORT**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): Syed Iqbal MD, Camille Paglia MD, G. Ali Rahmani MD*

**SUMMARY:**
INTRODUCTION:
Atypical antipsychotics are effective for the treatment of psychosis and other conditions. They also carry a risk of causing serious complications, including anticholinergic side effects (dry mouth, constipation, urinary retention, bowel obstruction, blurry vision, increased heart rate and decreased sweating). Physicians can help patients avoid these medical complications through awareness of the signs and symptoms of anticholinergic side effects and of the effective management of these symptoms.
CASE REPORT:
We describe here the case of a 23-year-old female, the mother of two young girls, who was assessed in our clinic for bipolar disorder, most recent episode mixed. She had taken valproic acid and lithium in the past, which were discontinued secondary to weight gain and alopecia. She was started on risperidone for mood stabilization, at 0.5 mg PO HS, which she tolerated well. She continued to complain of symptoms of irritability, mood swings and racing thoughts. Risperidone was titrated up to 1 mg HS. The patient reported having blurry vision on the third day thereafter. She was instructed to stop this medication and go to the nearest ER. Her visual symptoms improved following discontinuation of the medication. She was subsequently lost to follow-up. She had not been on any other medications that might have caused visual disturbances. She had denied using any illicit substances while in treatment. Her laboratory tests had been within normal limits.
CONCLUSION:
Blurry vision is a side effect associated with treatment with risperidone in higher dosages, which may disappear, without worsening of symptoms, after decreasing the daily dosage

of risperidone. Further study is necessary for a more precise understanding of this condition.

**NR5-50**

**PARESTHESIA SIDE EFFECT OF TOPRIMATE: A CASE REPORT**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): Syed Iqbal MD, G. Ali Rahmani MD, Maryam Namdari,MD*

**SUMMARY:**

Back ground:
Topiramate (brand name topiramate) is an anticonvulsant (antiepilepsy) drug. In late 2012, topiramate was approved by the United States Food and Drug Administration (FDA) in combination with phentermine for weight loss. The drug had previously been used off-label for this purpose. Topiramate is used to treat epilepsy in children and adults, and it was originally used as an anticonvulsant. In children, it is indicated for the treatment of Lennox-Gastaut syndrome, a disorder that causes seizures and developmental delay. It is also Food and Drug Administration (FDA) approved for, and most frequently prescribed for, the prevention of migraines. Psychiatrists have used topiramate to treat bipolar disorder,[7] and they sometimes use topiramate to augment psychotropics, or to counteract the weight gain associated with numerous antidepressants. In 2006, a Cochrane review concluded that there is insufficient evidence on which to base any recommendations regarding the use of topiramate in any phase of bipolar illness. Topiramate has many side effects and one of the side effect is paresthesia. Its incidence is more then 10%.
Case study:
26 year old CF presented to our clinic for assistance with treatment of her depression. Patient has history of hypomania in the past, last episode was 2 years ago. We deferred used of quetiapine secondary to her obesity. She had rash with lamotrigine in the past so that was not started. She was started on topiramate 25mg which was titrated up to 50mg PO daily. She developed paresthesia secondary to that which is an abnormal sensation, typically tingling or pricking ("pins and needles"). She was not on any medication at that time. Her topiramate was discontinued with improvement in her symptoms of paresthesia.
Conclusion:
Topiramate is generally well tolerated. General observations suggest that side effects occur with high dose titration and frequently resolved or lessened with time and/or dosage reduction. Conversely, slow dose titration is associated with a lower rate of side effects. This is in agreement with data from epilepsy clinical trials, which suggest possible appearance of adverse reactions and treatment discontinuation following rapid dose titration and a target dose greater than 400 mg/day. Paresthesia and numbness is one of the most frequent side effect which has an incidence of 10% during treatment.

**NR5-51**

**STEROID-INDUCED PSYCHOSIS: A CASE REPORT**

*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): G. Ali Rahmani MD*

**SUMMARY:**

INTRODUCTION:
Corticosteroids are a widely used in modern medicine and are effective in treatment of number of conditions. They are known to cause neuropsychiatric side effects. Per literature, the risk of depression, mania, psychosis/delirium increased with glucocorticoid exposure. Suicidal Ideation and attempts risk increased in this population which is an alarming factor.
CASE REPORT:
41 years old male with no past Psychiatric history presented to ER with dental pain. Patient was found to have big dental abscess. He was evaluated and was discharged from ED on Decadron 4 mg once daily, Percocet and, Clindamycin. .
2 days after, he was brought in ER by mother having bizarre behavior, stating that patient has been found in the closet with his dogs, and was crying. He was paranoid about space ship, ''will come and destroy him'' and positive AH, ''take revenge from people''. He was homicidal, ''will kill my business partner''. At his presentation he appeared paranoid, disheveled, poor eye contact with mild psychomotor agitation. He was trying to leave to ED. All medical work up was negative. His Decadron was stopped and he was given haloperidol and lorazepam. Later 302 petition was filed and patient was shifted to psych facility. His haloperidol was continued and lorazepam was switched to prn for agitation. He responded well to medication and became asymptomatic in 2 days of hospital stay. He was discharged to home with psych outpatient follow up. Per his mother patient did not have any previous psych history, no family history of mental health. On phone follow up with her, patient continued to do well and did not require any antipsychotic.
CONCLUSION:
This case underlies the importance of detection of steroid induced psychosis and its management. A person without family history and risk factor a person can develop steroid induced psychosis. The incidence of neuropsychiatric effects of steroids has ranged from 2% to 60%. Some literature did mention that 77% of patients developed psychiatric symptoms when prednisone doses of >40mg/day were employed. However there was no significant correlation between the dosage, onset, type or duration of psychotic symptoms. There are no current treatment line has been established.

**NR5-52**

**PSYCHIATRIC READMISSIONS AT UC SAN DIEGO MEDICAL CENTER: DESCRIBING CHARACTERISTICS OF PATIENTS WITH 30-DAY READMISSIONS**

*Lead Author: Lawrence Malak, M.D.*
*Co-Author(s): Karina Vesco, MSW, Steve Koh, MD, MPH MBA, Bill Perry, PhD*

**SUMMARY:**

Background: Psychiatric readmissions illuminate several potential areas where our mental health system break down, including access to medications, clinical services, housing and substance use treatments. Readmissions also represent a significant cost to our healthcare system and will be used by Center for Medicaid and Medicare Services as a performance outcome measure. In 2012, San Diego County generated a report looking at readmissions to psychiatric facilities with the goal to gain more insight into this group.
Objective: To describe the rates and characteristics of patients who are admitted and readmitted to UCSD Medical Center and

compare these data with other San Diego County Psychiatric Facilities. Ultimately these data can help inform more effective interventions to reduce readmissions and improve patient's ability to maintain in the community
Method: All admissions to the psychiatric unit at UCSD medical center from July 1,2011 to June 30, 2012 were extracted from the EMR and analyzed using SPSS 21.0. Groups were separated into two groups: those with a single admission or no readmissions within 30 days and those with a 30 day readmission. Characteristics such as age, gender, diagnoses, insurance, substance use and ethnicity were evaluated in all 3 groups.
Results: UCSD NBMU had 825 total admissions with 720 individual patients who were admitted. 83 (11.8%) had readmissions at some point during the year representing 22.8% (188) of total admissions. 42 (5.8%) patients had a total of 101 (12.24%) 30-day admissions. No significant differences were found in Gender, Age or Ethnicity while differences were noted in Insurance status, Cost, Diagnoses and LOS.
Conclusions: Compared to both county and State, UCSD is significantly lower and closer to national rate. Significant differences in LOS and diagnoses, speaking to severity of illness of 30-day patients and perhaps increased need for case management programs. Possible limitations/explanations include that we only looked at our institution and did not look at admissions to other services.
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**NR5-53**

**PDE-4 INHIBITION RESCUES ABERRANT SYNAPTIC PLASTICITY IN DROSOPHILA AND MOUSE MODELS OF FRAGILE X SYNDROME**

*Lead Author: Sean M. McBride, M.D., Ph.D.*
*Co-Author(s): Catherine H. Choi1, M.D., Ph.D., Brian P. Schoenfeld, B.A., Aaron J. Bell. Ph.D, Joseph Hinchey, Ph.D., Richard J. Choi, B. A., Paul Hinchey, B.S., Maria Kollaros, M.S., Michael J. Gertner, M.S., Neal J. Ferrick, B.A., Allison M. Terlizzi, B.A., Newton H. Woo, Ph.D., Michael R. Tranfaglia, M.D., Steven Arnold, M.D., Steven J. Siegel, M.D., Ph.D., Thomas V. McDonald, M.D., Thomas A. Jongens, Ph.D.*

**SUMMARY:**
Fragile X syndrome is the leading cause of intellectual disability and autism resulting from a single gene mutation. Previously, we characterized social and cognitive impairments in a Drosophila and mouse models of Fragile X syndrome and demonstrated that these impairments were rescued by treatment with metabotropic glutamate receptor (mGluR) antagonists or lithium. In the mouse model of Fragile X a well-characterized phenotype is enhanced mGluR-dependent long-term depression (LTD) at Schaffer collateral to CA1 pyramidal synapses of the hippocampus. Herein, we have now identified a novel drug target in the mGluR signaling pathway, phosphodiesterase-4 (PDE-4), and demonstrate PDE-4 inhibition as a therapeutic strategy to ameliorate memory impairments in the Drosophila model of Fragile X. We confirm this result with genetic manipulation of PDE-4 in the Drosophila model. Furthermore, we examine the effects of PDE-4 inhibition by pharmacologic treatment in the Fragile X mouse model. Acute inhibition of PDE-4 by pharmacologic treatment in hippocampal slices rescues the enhanced mGluR-dependent LTD phenotype. Additionally, chronic treatment of Fragile X mice in adulthood with a PDE-4 inhibitor for eight weeks also restores the level of mGluR-dependent LTD to those observed in wild type (WT) animals. Translating the findings of successful pharmacologic intervention from the Drosophila model into the mouse model of Fragile X syndrome is an important advance, in that this identifies and validates PDE-4 inhibition as potential therapeutic intervention for the treatment of individuals afflicted with Fragile X syndrome.

**NR5-54**

**COMMUNICATION TECHNOLOGY UTILZATION AND ATTITUDES AMONG PSYCHIATRIC PATIENTS IN AN URBAN COMMUNITY MENTAL HEALTH SYSTEM**

*Lead Author: Jim Monestime, B.S.*
*Co-Author(s): David Goldsmith, M.D., Robert Cotes, M.D.*

**SUMMARY:**
INTRODUCTION:In persons with severe and persistent mental illness, medication non-adherence is a barrier to effective treatment and is often the most common cause of relapse. Recent technological advances, including the widespread use of cellular phones and internet enabled mobile devices, offer a potential tool that may increase medication adherence or appointment show rates through reminders via phone calls, emails, text messaging, or programmed alerts. Grady Memorial Hospital (GMH), located in Atlanta GA, provides psychiatric services to the uninsured (up to 65%) and a disproportionate number of persons with serious and persistent mental illness. As an organization, prior to developing interventions using communication technology capable of providing patient reminders, we sought to characterize patients' existing access and attitudes to technological devices. We hypothesize that patients would be interested in utilizing these devices to receive personal medical information and reminders.
METHODS: We developed a survey to characterize the usage and attitudes in patients at GMH receiving psychiatric services. The survey asked about access to landline telephones, cell phones, and the internet. The survey also elicited patients' interest in using these forms of technology as a means to facilitate their adherence with prescribed medications and follow up clinic appointments. Patients were randomly chosen from the inpatient psychiatric unit, the outpatient clinic, a treatment resistant schizophrenia clinic, and an outpatient psychosocial rehabilitation program.
RESULTS: 149 of 221 eligible patients agreed to participate in the study (67%) and 121 of these patients (81%) responded that they thought that technology utilization would help them manage their health. Sixty eight percent (102/149) of patients reported that they owned a landline telephone. Sixty four percent (96/149) of patients reported having access to a cel-

lular phone, of which 86% (83/96) were capable of receiving text messaging and 51% (49/96) were capable of accessing the internet on their phone. Fifty three percent (79/149) of patients reported having access to a computer at home and fifty four percent (80/149) of patients reported having an email account. Thirty one percent (50/149) reported utilized social media including Facebook and Twitter. Patients reported being interested in receiving personal medical information using landline phones (68/149; 64%), text messaging (77/149; 52%), email (78/149; 52%), and social media (46/149; 31%).
CONCLUSIONS: We found that a large number of patients had access to mobile devices, including text message and internet enabled capabilities, and were interested in using these technologies to receive medical information. Future directions will seek to use these devices to enhance medication adherence, which may improve treatment outcomes, decrease rehospitalization rates, and improve quality of life in patients with severe mental illness.

**NR5-55**

**LITHIUM USE FOR THE TREATMENT OF PSYCHOTROPIC-INDUCED HYPONATREMIA**

*Lead Author: Farha B. Motiwala, M.D.*
*Co-Author(s): Dr. Amel Badr, MSc, MD*

**SUMMARY:**

Objective: Lithium use for the treatment of psychotropic induced hyponatremia.
Background: Atypical antipsychotics are known to cause Syndrome of inappropriate Antidiuretic hormone and accordingly hyponatremia. This has been a challenge in treating psychotic patients especially patients with psychogenic polydipsia as part of its symptoms. Lithium is known to induce nephrogenic insipidus and could be helpful to resolve antipsychotic induced hyponatremia.
Case Narrative:
Patient is a 40 yr old male with a history of schizoaffective d/o bipolar type. Patient has been treated with valproic acid and fluphenazine. Patient had multiple presentations to emergency room due to altered mental status and agitation which was found to be induced by hyponatremia. Patient also had psychogenic polydipsia. Diagnosis of hyponatremia due to SIADH was made as biochemical blood and urine test results were consistent with SIADH. Medical causes of SIADH were ruled out and it was concluded that hyponatremia was due to psychotropic medications and psychogenic polydipsia. Patient was started on lithium and clozapine. Repeated blood tests showed gradual correction of sodium level, without any sodium supplements given to patient.
Discussion: The patient had low level of lithium and low levels of sodium at the time of admission which suggests that lithium did not cause hyponatremia. Patient was started on lithium which was one of patient's home medications. Patient was able to maintain normal sodium levels with lithium. Thus lithium is useful for the treatment of hyponatremia induced by psychogenic polydipsia or psychotropic medications.
Conclusion: Lithium induces nephrogenic diabetes insipidus and thus counteracts effects of ADH. Lithium can be effective for patient s with schizoaffective disorder as it can treat both psychiatric symptoms and prevent hyponatremia. Further research is required to explore the role of lithium in treatment of hyponatremia.

**NR5- 56**

**THE DIAGNOSTIC CHALLENGE OF PSYCHIATRIC SYMPTOMS IN GLYCOGEN STORAGE DISEASE**

*Lead Author: Farha B. Motiwala, M.D.*
*Co-Author(s): Dr. Amel Badr, MSc, M.D.*

**SUMMARY:**

Objective
We present this case report with the aim to bring to attention the
Rare yet possible atypical presentation of Glycogen Storage Disease with psychiatric symptoms.
Misdiagnosis of the patients with psychiatric disorder may result in delayed and inappropriate treatment
Rational and Background
Tarui Disease [Phosphofructokinase deficiency} was the first disorder recognized to directly affect glycolysis.
More than one hundred patients have been described with prominent clinical symptoms characterized by muscle cramps, exercise intolerance, Rhabdomyolysis and myoglobinuria often associated with hyperuricemia and hemolytic anemia.
It is to our knowledge after intensive literature review that only one case report was published about a patient with Glycogen storage disease presenting initially with psychiatric symptoms including Visual hallucinations.
We present a case diagnosed with Tarui disease, presenting to the emergency room with paranoid delusions and disorganized thought process.
Case Narrative We present the case of 27 y.o. male with history of schizophrenia, admitted to the hospital due to auditory hallucinations and paranoid delusions, .
Reviewing the patient's records revealed Past psychiatric diagnoses of schizophrenia. Medical history was significant for Tarui disease. On reviewing his laboratory results, the total CK level was >32000 and hyperuricemia at the time of admission.
Collateral information obtained from mother: Mother reported that patient at age 8 started to have difficulty in school, and was diagnosed with learning disability after decline in grades. Patient also had muscle cramps and was found to have hematuria and after exhausting diagnostic work up in Columbia University, he was diagnosed with Tarui disease at age 12. Since then, patient was receiving Magnesium infusion and liver and kidney functions were monitored biweekly.
Three years prior to this presentation, patient was observed by family to have paranoid delusions, auditory hallucinations and agitation which resulted in multiple psychiatric hospitalizations and he was misdiagnosed with paranoid schizophrenia
On this admission due to the high creatinine phosphokinase level, starting patient on antipsychotic was a challenge. As patient had prior good response to Olanzapine, it was started again Medical, Urology and Gastroenterology teams were consulted. Intravenous fluids were started. Initially patient continued to be paranoid and irritable. With medical management the CPK level decreased to 1463. The mental status improved with clearing of auditory hallucinations. Patient continued to be paranoid and guarded, yet with no obvious agitation.
Discussion
This case report brings to attention the possible atypical presentation of Glycogen storage Disease with psychiatric symp-

toms.
Avoiding misdiagnosis with psychiatric disorder would ensure better management and prognosis

**NR5- 57**

**WHEN YOU HIT ROCK BOTTOM, KETAMINE TO THE RESCUE IN TREATMENT REFRACTORY DEPRESSION IN ELDERLY POPULATION: A CASE REPORT**

*Lead Author: Munjerina A. Munmun, M.D.*
*Co-Author(s): Wei Du, M.D., Mitali Patnaik,M.D., Celia Varghese, M.D., Shimon Waldfogel, M.D.*

**SUMMARY:**
Background: Depression is a multifactorial illness, where trials of treatment have been implemented, with hopes of establishing better quality of life. However, many patients have tried multiple antidepressants, augmentation therapy and ECT to no avail. Ketamine is an innovative drug, gaining popularity, for the rapid resolution of symptoms in patients with refractory depression. Majority of the studies published demonstrate the effectiveness of ketamine in middle age demographics. There is a sparse amount of data available for effectiveness of ketamine in elderly population. Our case will demonstrate the safety and efficacy of ketamine in geriatric population showing resolution of symptoms in treatment refractory depression for significant duration of time.
Case: 81 yr old Caucasian, married female with 40 years history of relentless depression and multiple inpatient admission, presented to crisis center for evaluation of worsening symptoms of depression despite being on 3 distinct antidepressants. She exhibited anhedonia associated with low energy, hopelessness, worthlessness, poor appetite, increase sleep and apathy. Patient reported that her depression was successfully managed until May 2011. Her outpatient psychiatrist tried various different regiments but she did not show clinical improvement. Since May 2011, she had total of 4-inpatient psychiatric admission. She received 10 sessions of ECT in May 2011 without significant improvement. Despite the ECT treatment, patient was re- admitted to inpatient unit the following month for the exacerbation of depressive symptoms. Before admission, she was on clonazepam 0.25mg BID, fluoxetine 20mg, nortriptyline 25mg HS, desvenlafaxine 150mg. The patient was started on olanzapine 2.5 mg at bedtime. Her fluoxetine was up titrated to 30mg oral daily. Patient was given ketamine 100 mg/ml, injectable 45 mg at a rate of 70 ml/hr IV continuous over 45 minutes. After 1st day of infusion, depression improved by brighter affect and mood, increased motivation, improved energy and concentration. She was monitored one week following infusion where she had shown significant clinical improvement. Post transfusion, she did not demonstrate any elevated blood pressure, dissociation, dizziness, blurry vision although she had mild headache for short duration.
Discussion: Multiple studies demonstrated how ketamine establishes rapid improvement of depressive symptoms after receiving a single infusion. Majority of the research targets middle age population, whereas this case showed the effectiveness and safety of ketamine use in treatment refractory depression in elderly. However, more studies would need to be conducted to establish the long-term benefits. In patients who failed to respond to conventional antidepressant treatment and ECT, the safety and efficacy of ketamine in geriatric population showed resolution of symptoms in treatment refractory depression paving the way for future investigation.

**NR5- 58**

**HYSTERICAL MUTISM: A CASE REPORT**

*Lead Author: Padmapriya Musunuri, M.D.*
*Co-Author(s): Fahad Ali MD, Gibson George MD, Ajita Mathur MD*

**SUMMARY:**
Introduction
Conversion disorder, earlier known as hysterical neurosis, is a neurological symptom complex originating from psychological factors, which can manifest as syncope, seizures, mutism or impairment of motor and sensory functions. Conversion is defined as the unconscious expression of internal emotional conflicts as physical symptoms. This unconscious expression differentiates conversion from somatization disorders, hypochondriasis and malingering. Most recently it has been more appropriately referred to as functional neurological symptoms, which emphasizes the change in the functioning of the nervous system rather than in its structure. Hysterical mutism or functional aphonia is a type of conversion disorder characterized by impairment of vocal function resulting in loss of voice and speech. Though, it was first described by Jean-Martin Charcot in the 19th century, this clinical entity continues to be a diagnostic challenge due to lack of diagnostic criteria or diagnostic tests.
Purpose
The authors present a case of a highly functional 32-year-old female teacher with no significant past psychiatric history, who became wheel-chair bound, unable to perform her activities of daily living and mute, following a dental procedure. This case emphasizes the challenges in the diagnosis and treatment of conversion disorder and the role of psychotherapy in the treatment of these patients
Method
We performed a retrospective review of this patient's chart. A PubMed literature search was conducted using the search terms "conversion disorder", "hysterical mutism" and "functional aphonia".
Discussion/Results
Hysterical mutism or functional aphonia as seen in our case is a rare presentation, seen in less than 5% of conversion disorders. There are only a few review papers published regarding hysterical mutism.
Interestingly, this case did not fit the classical presentation of conversion disorder. The symptoms in this patient developed after a physical event, though she appeared to have unresolved conflicts related to her past sexual experiences and trauma. The patient presented with constellation of symptoms affecting multiple systems. Additionally, the patient did not meet criteria for any other axis I diagnosis, though had some depressive component to her mood.
She responded fairly well to supportive psychotherapy. This positive response conforms to prior studies demonstrating the efficacy of psychotherapeutic modalities in treatment of conversion disorder. This case reinstates the fact that conversion disorder is a diagnostic and treatment challenge. Comprehensive assessment by careful history taking, collateral information, physical examination and diagnostic testing is crucial for accurate diagnosis and effective management.

**NR5- 59**

**CHALLENGES OF NON-PSYCHIATRIC PSYCHOSIS: A CASE REPORT**

*Lead Author: Padmapriya Musunuri, M.D.*
*Co-Author(s): Gibson George MD, Ajita Mathur MD, Carolina Retamero MD*

**SUMMARY:**

Introduction
It has been reported that brain tumors can be neurologically silent and present only with psychiatric symptoms like anxiety, depression, psychosis or personality changes. Studies have shown that tumors affecting the frontal lobe, temporal lobe, hippocampus, thalamus and hypothalamus commonly present with these psychiatric manifestations. Temporal lobe lesions have been reported to lead to schizophrenia-like psychosis. This type of psychosis seen in temporal lobe tumors was first described by Walther-Buel and Gudietti. There are a variety of neurological or medical conditions that can present only with psychiatric symptoms. Drugs and medications are the other organic causes of psychiatric symptoms.
Purpose
We present the case of a 75-year-old gentleman with no significant past psychiatric history who presented with acute onset of anxiety, mood lability, hallucinations and paranoid delusions. There were no focal neurological deficits and CT scan was normal except for an old craniotomy scar, but a subsequent MRI revealed a high-grade glioma in the right mesial temporal lobe.
Method
The authors performed a retrospective review of this patient's chart. A PubMed and Psychiatry Online literature search was conducted using the search terms "brain tumor and psychosis", "temporal lobe tumor and psychosis", "temporal lobe tumor and schizophrenia" and "organic psychosis".
Discussion
Although a craniotomy scar was noticed on CT, neither he nor his family had any recollection of any surgeries in the past, and was not reported on presentation. He had no prior psychiatric symptoms and no significant past medical history. His symptoms were acute in onset and progressive. The tumor was deemed inoperable by neurosurgery and patient was discharged home with antiepileptic and antipsychotic with outpatient neurology and psychiatry follow up. The patient showed improvement in his psychotic symptoms on low dose of risperidone.
Prior studies have shown that acute and late-onset of psychiatric symptoms should raise high suspicion for medical or neurological causes. Additionally, acute changes in mental status, atypical presentation, poor response to treatment or waxing and waning of symptoms should lead to suspicion of organic etiology and necessitates immediate neurological evaluation. It has also been recommended that any patient over 40 years of age with late onset of psychiatric symptoms or acute neurobehavioral deterioration warrants neuroimaging of the brain.

**NR5-60**

**PIERRE RIVIÈRE VERSUS ANDERS BREIVIK: IS HISTORY REPEATING ITSELF?**
**RATIONALITY, MADNESS, AND PSYCHOPATHOLOGY IN THE 19TH AND 21ST CENTURY**

*Lead Author: Lars S. Nilsson, M.D.*
*Co-Author(s): Milting, Kristina, M.D., Parnas, Annick Urfer, M.D, Ph.D., Petrov, Igor, M.D., Sjaelland, René, M.D.*

**SUMMARY:**

Introduction:
In 2011 Anders Breivik, AB, slaughtered 77 civilians in a twofold attack on downtown Oslo and the island of Utøya. In the ensuing trial AB's sanity or lack thereof was fiercely contested as two psychiatric evaluations arriving at radically different conclusions were drawn up. One found AB to be suffering from paranoid schizophrenia whereas the other discovered no psychotic manifestations and instead diagnosed him with a narcissistic personality disorder with antisocial traits.
Though unrivalled in the scope of its bestiality the case of AB is not unique. In 1835 French peasant Pierre Rivière, PR, in a seemingly incomprehensible act of cruelty killed his immediate family. Some contemporaries including Esquirol saw in PR the traces of radical irrationality while others ascribed the deeds to an evil constitution. Thus a basic disagreement on the make-up of rationality and madness is seen to persist across the centuries and the advances made in all fields of psychiatry. It is the goal of this poster to clarify the nature of this divergence of opinions and to point a way forward.
Methods:
A 1975 book by Foucault et al. contains a manuscript by PR detailing the background for his actions, exempts from contemporary sources, and a number of analyses of the psychiatric evaluations that followed. During the trial of AB the two psychiatric evaluations were leaked to the press, thus making it possible to carry out a phenomenologically informed, comparative psychopathological reading of the documents using the case of PR as a perspectival backdrop for understanding the disagreement at play.
Results:
As were the case in 19th century France a certain grille de lecture influences the evaluations of AB. Rather than being neutral case reports the evaluations paint different portraits as pertinent omissions of certain facts are made. Thus the second evaluation manages to invoke an aura of rationality around AB that allows for radically different interpretations of behavior and statements that were initially considered indicative of psychosis.
Discussion and conclusion:
As the recent debate over the revision of the DSM clearly demonstrated current diagnostic praxis faces gross challenges. It appears to be this fundamental crisis of both academic and clinical psychiatry that is encapsulated in the disagreement on the constitution of PR and AB. Across almost two centuries and the huge strides made by neurobiology and the cognitive sciences these two cases seem to have run a parallel yet somewhat misleading course. Prominent psychiatrists have called attention to the unintended consequences of adopting the diagnostic manuals as the ultimate authority on psychopathology. We suggest that a renewed interest in the continuation of a phenomenological psychopathology with a strong eye for context and Gestalt as opposed to mere "symptom-counting" is indeed called for as a sine qua non for a psychiatry that strives for both reliability and validity

**NR5-61**

**DEPRESSIVE AND ANXIETY SYMPTOMS IN ACADEMIC MEDICAL FACULTY**

*Lead Author: Patricia C.M. Nolan, M.D.*
*Co-Author(s): George Hadjipavlou, M.D., Raymond W. Lam, M.D.,*

**SUMMARY:**
Introduction: A growing body of research has investigated the mental health of physicians. However, little is known about non-physician academic faculty who may be at equally high risk of experiencing symptoms of mental illness and resultant work impairment. We surveyed depressive and anxiety symptoms and mental-health related work dysfunction in a sample of physician and non-physician faculty within a large Canadian Faculty of Medicine (FoM).
Methods: The Stress and Depression Checkup was a component of a workplace mental health initiative sponsored by the FoM at the University of British Columbia. All full-time FoM employees (~ 700 academic faculty and 1500 administrative/support staff) were invited by email to complete an anonymous web-based mental health screening survey which included the PHQ-9 and the GAD-7, two widely used screening instruments for depression and anxiety, respectively, and the Lam Employment Absence and Productivity Scale (LEAPS), a validated measure of work impairment. Several waves of survey recruitment were conducted over a one-year period.
Results: A total of 1127 unique responses were recorded, including 290 from self-identified academic faculty, representing a response rate of 41%. Eighteen percent (42/237) of academic faculty met PHQ-9 criteria for clinically significant depression while 16% (37/232) met GAD-7 criteria for clinically significant anxiety; 20% (35/172) had significant work impairment according to the LEAPS. Compared to physician faculty (n=117), non-physician faculty (n=147) had higher rates of anxiety and depression. Non-physician faculty were also significantly more likely to report work impairment, and had higher mean scores on the PHQ-9, GAD-7, and LEAPS.
Conclusions: Academic medical faculty responding to an anonymous online survey reported high rates of clinically significant depressive and anxiety symptoms and work impairment. Our results suggest that non-physician academic faculty may be at higher risk for developing mental health symptoms than their academic physician colleagues.

**NR5-62**

**DEMOGRAPHICS AND CLINICAL PROFILE OF 'PSYCHIATRIC FREQUENT FLYERS' TO THE EMERGENCY DEPARTMENT IN TERTIARY CARE HOSPITAL SETTINGS**

*Lead Author: Varinderjit S. Parmar, M.D.*
*Co-Author(s): Ewa Talikowska-Szymczak MD; Peter Szymczak MD; Erin Meiklejohn ; Dianne Groll PhD*

**SUMMARY:**
INTRODUCTION
Among researchers worldwide there has been an increasing interest focusing on a group of individuals who contribute a disproportionate number of visits to the Emergency Department for psychiatric reasons. Frequent users of the ED services are proven to be a diverse group of patients that provide a challenge to emergency physicians.
PURPOSE
This study aims to find out frequent users' demographics, most common presenting diagnosis and emergency services utilization patterns in tertiary care centers. Data obtained from this study may permit for early identification of that patient population and more efficient utilization of PES resources.
METHOD
Data for emergency psychiatric visits at 2 tertiary care hospitals were obtained for a 5-year period from April 2006 to March 2011. The data detailed visits to the ED including: dates, times, gender, marital status, age, and primary diagnosis. Primary Diagnosis was also sorted into eleven diagnostic clusters. Frequent flyers were defined as individuals who attended the hospital 5 or more times during the 5 years of the data sample. The data was coded separately for these individuals to include the number of visits, their average age, and their most common diagnosis given at ER visits. A descriptive analysis was performed to assess the characteristics of 'frequent flyers' and the nature of their hospital visits.
RESULTS
Frequent flyers represented 2.18% of 6919 total attendees to the two Kingston emergency departments. Visits by frequent flyers, made up 15.76%. Frequent flyers were found to be 68.9% male and 31.1% female, with an average age of 40.55. The average number of visits made by a frequent flyer was 10.37 visits over 5 years, Approximately 11% of frequent flyers attended the hospital 20 or more times. Substance use was found to be the most common primary diagnosis (58.3%), anxiety disorders (15.2%) and schizophrenia and psychotic disorders begin the (13.2%); mood disorders, adjustment disorders, somatoform and dissociative disorders, personality disorders and childhood disorders accounted for the remaining 13.2% of primary diagnoses.
CONCLUSION
Frequent flyers were much more likely to present with a diagnosis of substance use and of schizophrenia and psychotic disorders and much less likely to have anxiety or mood disorders. Frequent flyers generally came into the emergency room with more than one type of diagnosis
Frequent flyers' visits had much higher instances of arriving in an ambulance, slightly higher chances of being brought in by the police, and a significantly lower chance of being a walk-in visits.
Frequent flyers were more likely to have the classification of urgent (triage code status) than the non-frequent flyer group. The average length of ER visit was not found to be significantly different for frequent flyers compared to non-frequent flyers.

**NR5- 63**

**PREVALENCE OF METABOLIC SYNDROME IN ACUTE PSYCHIATRIC INPATIENT SETTING**

*Lead Author: Archana D. Patel, M.D.*
*Co-Author(s): Tariq A Munshi ,M.D.*

**SUMMARY:**
Introduction: People with severe mental illness such as schizophrenia and bipolar disorder are at increased risk of developing cardiovascular disease as a result of multiple aetiology including genetic, life style, disease specific as well as effect of treatment.
Metabolic syndrome is a term that describes a group of conditions that puts an individual at risk for cardiovascular disease.

The present study examined the overall prevalence of metabolic syndrome in individuals admitted to an acute Psychiatric unit as well as the prevalence of individual risk factors.
Method: 50 inpatients in an acute psychiatric unit were recruited following approval from the Research Ethics Board. Clinical and demographic data included age, sex, diagnosis, treatment, and history of smoking. Diagnoses were documented and the treating teams had used the DSM IV criteria. The International Diabetes Federation diagnostic criteria for metabolic syndrome was used which is based on central obesity, triglyceride level, hypertension and raised fasting plasma glucose Investigations included standardized laboratory work up ,physical examination which included blood pressure and abdominal girth measurement.
Results: The study showed that 48 % of patients met the criteria for metabolic syndrome. It was discovered that central obesity (as measured by waist circumference) was the most prevalent parameter even in patients not meeting the full criteria for Metabolic Syndrome, followed by hypertension and low HDL.
Discussion: Our study showed that psychiatric patients are at increased risk of metabolic syndrome which could be result of many factors including antipsychotic medication side effects, life style, and genetics. We can decrease this risk by identifying such patients, and designing interventions such as educating clinicians involved in their care regarding risk factors, including use of psychotropic agents with a favourable metabolic profile. We recommend regular monitoring of patients' waist circumferences, blood pressure and blood investigations of the indicated metabolic parameters incorporated in managing such individuals. In addition it is important to include educating patients to adopt a healthy life style and having regular follow up by their family physicians.
Learning Objectives: At the end of this session participants will be able to:
1.Determine prevalence of metabolic syndrome in acute psychiatry setting
2.Understand how to decrease the risk of having metabolic syndrome in psychiatric inpatient setting
3.To high light the importance of identifying the risk factors for developing metabolic syndrome in psychiatric inpatient setting at an early stage.
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**NR5-64**

**NEUROMYELITIS OPTICA PRESENTING WITH PSYCHIATRIC SYMPTOMS AND CATATONIA: A CASE REPORT**

*Lead Author: Rachit Patel, M.D.*
*Co-Author(s): Abdulkader Alam, M.D., Patricia Fertig, D.O., Briana Locicero, B.A.*

**SUMMARY:**

Objective: Report a case of NMO presenting with catatonia.
Background: Demyelinating diseases such as Multiple Sclerosis (MS) have a higher prevalence of mental illness than the general population. Neuromyelitis Optica (NMO) is an aggressive demyelinating disease that characteristically affects the spinal cord and optic nerves and has recently been differentiated from MS. There is only one reported case of a patient with NMO presenting with psychiatric symptoms but no reported case of NMO presenting with catatonia. Case: A 16-year-old Antiguan female with NMO presented with a one-week history of altered mental status and agitation. On exam, she was found to have cognitive impairments (MOCA score 17/30) as well as symptoms of psychosis including delusional thinking, auditory and visual hallucinations. On the Bush Francis Catatonia Scale she had a positive score in 11/23 domains consistent with a diagnosis of catatonia: excitement, immobility, mutism, staring, posturing, waxy flexibility, echolalia, verbigeration, withdrawal, perseveration and combativeness. MRI Brain/C-spine/T-spine with gadolinium showing multiple hyperintense, non-enhancing lesions, presence of oligoclonal bands in the CSF and serum aquaporin-4 antibody level >160 U/ml (normal <1.6 U/ml) were consistent with a diagnosis of NMO. Extensive testing was performed to rule-out other infectious, oncologic or genetic etiologies, which were all negative. Neurological illness was treated with azathioprine, steroids, intravenous immunoglobulin, plasmapheresis and rituximab. Psychosis and catatonia were treated with lorazepam followed by risperidone six days later. Lorazepam and risperidone were titrated up to 1.5mg/day and 2mg/day, respectively with only some improvement in catatonic and psychotic symptoms. Conclusion: Our case confirms one prior report that NMO can present with psychiatric symptoms. In addition, this is the first case in the literature that illustrates NMO presenting with catatonia. The patient received treatment for catatonia and psychosis. However, improvement was slow suggesting that the treatment of catatonia in the setting of a neurological illness such as NMO can be challenging. Further studies are needed regarding the association between these two syndromes as well as the treatment approach.

**NR5-65**

**TRENDS, CARDIAC CATHETERIZATIONS, REVASCULARIZATION AND INPATIENT MORTALITY AFTER ACUTE MYOCARDIAL INFARCTION IN PATIENTS WITH MENTAL DISORDERS**

*Lead Author: Trinadha Pilla, M.D.*
*Co-Author(s): Malathi Pilla, MD; Steve Scaife, PhD; Aghaegbulam Uga, MD; Obiora Onwuameze , MD,PhD ; Jeffrey I. Bennett, MD*

**SUMMARY:**

Objective: To investigate the trends, cardiac catheterizations, revascularization procedures and inpatient mortality after acute myocardial infarction (AMI) in schizophrenia, bipolar, anxiety and depressive disorders, compared with the general population.
Methods: Nationwide Inpatient Sample (NIS) database is a stratified inpatient discharges database in the United States. This database was used to perform a cross-sectional study from 2002 to 2011. Mental health disorders patients who had AMI were compared with a random sample of all other adults with AMI who had no mental illness. Receipt of cardiac catheterization and subsequently PTCA or CABG and finally inpatient mortality were compared in logistic regression models after adjusting for demographic, medical risk factors, hospital properties and AMI complications.
Results: Our study showed there has been a significant rise in

AMI in psychiatric patients over the last 10 years across the whole country. There has been approximately a 50% decrease in ST segment elevation myocardial infarction (STEMI) in the general population and schizophrenia over the last 10 years. Whereas there has a been an approximately 30%,15% and 5% increase in STEMI for bipolar disorder, anxiety disorders and depressive disorders respectively during the same period. There has been an approximately 5% decrease in non - ST segment elevation myocardial infarction (NSTEMI) in the general population compared to a 30%,300%,150% and 200% increase in NSTEMI for schizophrenia, bipolar disorder, anxiety disorder and depressive disorder during the same period. From the year 2002 to 2011 a total of 1,711,162 adult patients who had AMI without any psychiatric disorders were identified. Patients with schizophrenia (n=6437), bipolar disorder(n=10,223),anxiety disorder (n=50,981) and depressive disorder (n=106,790) had a significantly decreased likelihood of catheterization (60%,45%,10%,30%, respectively) and revascularization (35%,35%,20%,35%, respectively) during a AMI compared with controls. In regards to inpatient mortality schizophrenia patients have 20% to 50% more likely, bipolar patients have about 20% less mortality, anxiety disorders 30% less mortality and depressive disorders have about 20% less mortality compared with the general population even when adjusted to various confounding covariates.

Conclusions: Even after adjusting for potential confounders including demographic features, risk factors, hospital properties and complications there were significant decrease in the rates of catheterizations and subsequent PTCA or CABG in patients with various mental disorders compared with the general population. Schizophrenia patients with AMI had significantly higher inpatient mortality unlike bipolar, anxiety and depressive disorders patients who had significant less inpatient mortality compared with the general population. These findings suggest discrepancies in outcomes that may benefit from further investigations.

**NR5-66**

**POTENTIAL MECHANISMS UNDERLYING THE EFFECTIVENESS OF KETAMINE IN A CASE OF SEVERE ANOREXIA NERVOSA: EFFECTS ON DEPRESSION AND COGNITIVE FLEXIBILITY**

*Lead Author: Marlon P. Quinones, M.D., M.S.*
*Co-Author(s): Victoria Rodriguez, N.P., Maxim Eckmann, M.D., Joseph Drumm, D.O., Alexander Papanastassiou, M.D., Paula Montana De La Cadena, M.D., Vivek Singh, M.D.*

**SUMMARY:**

Introduction

Adult anorexia nervosa (AN) is associated with one of the highest mortality rates of any psychiatric illness due to the lack of effective treatments. At subanaesthetic doses, the non-competitive NMDA antagonist ketamine has a rapid therapeutic effect in depression and Obsessive-Compulsive Disorder (OCD) possibly by increasing neural plasticity (NP). Considering the high rate of depression and OCD symptoms in AN, we hypothesized that ketamine might have a therapeutic effect in this condition. We further hypothesized that ketamine's induction of NP would translate clinically into increased cognitive flexibility (CF) and insight.

Methods

A 33-year-old female with a 10 year history of AN, weighing 59lb/BMI 10.1 had an inability to maintain oral food intake (POi) requiring parenteral nutrition (TPN) that was given for 65 days along with olanzapine and psychotherapy. Patient gained only 0.14lb/day and there was no improvement in AN symptoms. As one of the last options, patient received IV ketamine for 5 consecutive days. Ketamine boluses (total 2mg/kg) were given for the first 2 days and for the remaining 3 days patient had 10-hour ketamine infusions (KI) (20mg/h) plus naloxone (0.2mg/h). Patient engaged in daily psychotherapy. 5 days after the last KI, patient received an additional ketamine boost (total 24mg) during anesthesia for deep brain stimulation (DBS) implantation (results to be described in a future report). The following were recorded daily: weight, POi and a battery of scales including 1) Beck Anxiety Inventory (BAI) and Hamilton Anxiety Rating Scale (HAM-A) for anxiety, 2) Beck Depression Inventory (BDI) and Montgomery-Asberg Depression Scale (MADRS) for depression, 3) Modified Eating Disorder Examination (EDE-Modified) for core anorexia symptoms, 4) Brown Assessment of Beliefs Scale (BABS) and CF Scale (CFS) for insight. SPSS was used for regression analysis and correlations.

Results

After the final KI patient increased her POi from a 65-day average of less than 15% to 66%. TPN was discontinued. The remaining 10 days of hospitalization and 3 weeks post-discharge, patient maintained 100% of POi. Patient's weight increased from 73.3 lb/BMI 12.6 at the end of KI to a discharge weight of 93 lb/BMI 16 (gain of 1.02 lb/day) and 110lb/BMI 18.9 by 3 weeks post-discharge. KI led to a rapid and sustained decrease in depression and anxiety ratings, but only a transient reduction in core AN symptoms. KI was also associated with increased CF, insight, and therapists' perceived openness to psychotherapy (OP). 50% of the variance in weight and POi were accounted by a reduction in depression ratings. CF was negatively correlated with depression scores (r=-0.7 P= 0.01).

Conclusions

Preliminary results from this case report suggest that ketamine may have a therapeutic role in the treatment of AN. This is possibly related to ketamine's antidepressant effect, which in turn may be linked to increased CF, insight, and OP.

**NR5- 67**

**THE IMPACT OF MATERNAL CHILDHOOD ABUSE ON OBSTETRICAL OUTCOME: A TRANSGENERATIONAL EFFECT**

*Lead Author: Veronica M. Raney, M.D.*
*Co-Author(s): Joshua M. Cisler, Ph.D., Shanti P. Tripathi, M.S., Christian Lynch, M.P.H., Bettina T. Knight, R.N., B.S.N., D. Jeffrey Newport, M.D., and Zachary N. Stowe, M.D.*

**SUMMARY:**

OBJECTIVE: A burgeoning literature has demonstrated that early adverse life events are associated with heightened vulnerability to a variety of adult medical illnesses. Similarly, previous studies indicate that adverse events during pregnancy may not only affect fetal development but may also be associated with vulnerability to adult illnesses for the offspring. It is unclear if maternal history of early adverse life events confers risk for negative birth outcomes that are associated with generational transmission of long term adverse outcomes in offspring. This study sought to examine the impact of early childhood trauma in mothers on birth outcomes in a clinical population devoid of many of the socioeconomic risk factors for adverse pregnancy

outcomes.
METHOD: Women were enrolled prior to pregnancy or early in gestation in a prospective, observational study of the course of mental illness during pregnancy and the postpartum period. Each woman completed a Childhood Trauma Questionnaire (CTQ) at study entry and the Beck Depression Inventory (BDI) over the course of pregnancy. The CTQ subscale totals, including physical, sexual, and emotional abuse, in addition to physical and emotional neglect, were used as indices of childhood trauma severity. The severity of depressive symptoms during pregnancy was characterized using the area under the curve (AUC) for BDI scores collected across pregnancy. Obstetrical and neonatal data were obtained from the medical record. We analyzed the main and interactive effects of childhood trauma and maternal depression on birth outcomes in multivariate regression models controlling for covariates of non-interest.
RESULTS: A total of 839 women were included in the study. The group was homogeneous with 100% prenatal care. Maternal childhood physical abuse and sexual abuse in the presence of perinatal depression were associated with lower APGAR scores at 5 minutes (Wald X2 = 9.13, p = 0.003 and Wald X2 = 5.44, p = 0.02, respectively). While the severity of both maternal depression during pregnancy (β= 0.00165, p = 0.04) and maternal childhood physical abuse (β= -0.09452, p = 0.04) correlated with birth weight, there was not an interactive effect between these variables. Estimated gestational age was negatively correlated with maternal childhood trauma (physical abuse, Wald X2 = 4.89, p = 0.03 and emotional neglect, Wald X2 = 3.82, p = 0.05); but there was no interaction between maternal depression and childhood trauma.
CONCLUSION: A maternal history of childhood physical and sexual abuse in combination with perinatal depression resulted in lower APGAR 5 minute scores. Similarly, associations with changes in birth weight and gestational age at delivery in this population underscore the need to more carefully examine potential transgenerational effects of early adverse life events.

**NR5-69**
**CHARACTERISTICS OF ANTIPSYCHOTIC USERS FROM 2003-2010 IN THE UNITED STATES**
*Lead Author: Kathryn K. Ridout, M.D., Ph.D.*
*Co-Author(s): Samuel J. Ridout, M.D., Ph.D., Junjia Zhu, Ph.D.*

**SUMMARY:**
Introduction: Studies suggest antipsychotic use has increased over time. There are limited data on antipsychotic use over time in the general population. The Medical Expenditure Panel Survey (MEPS) provides a complete source of data on the cost and use of healthcare nationwide. This research project examined antipsychotic use and user characteristics across the United States (U.S.) from 2003-10 using the MEPS database.
Methods: Data from 2003-2010 were collected from MEPS (~35,000 individuals a year, medical providers, employers across the U.S.), which is released by the Agency for Healthcare Research and Quality. The data were extracted, prescription and personal level files linked by each patient's unique ID, and the data weighted using the MEPS algorithm. Analyses were done using SAS software version 9.3 (SAS Institute, Cary, NC, USA) and R programming language version 2.15.2 (R Foundation).
Results: Antipsychotic users increased from 3,190,856 in 2003 to 4,231,261 in 2010 (33% increase). The number of users peaked in 2009 (4,888,574), but was never greater than 2% of the U.S. population (1.0%-1.7%). The proportion of users on a first generation antipsychotic (FGA) steadily decreased (32% in 2003; 11% in 2010). Quetiapine and risperidone were the most used across all years. Aripiprazole use increased precipitously from 2006-09, accounting for 32% of second generation antipsychotic use in 2009, while quetiapine accounted for 38%. Users aged 19-64 accounted for 67%-73% of users from 2003-10. The most used antipsychotic varied by age and year, but on average, aripiprazole was most used for those 18 years or under, quetiapine for ages 19-64, and FGAs for those 65 years or older. The number of users 18 years or younger increased more per year (8.5%/year on average) than any other age group. The proportion of female users from 2003-2010 was slightly higher than male (56% compared to 44%). More males were prescribed quetiapine and olanzapine than females. Most users were white (75-85%), followed by African Americans (AA: 11-19%). In 2010, the most commonly used antipsychotic for AA was risperidone, and aripiprazole for whites. AA users made up a greater proportion of FGA users in 2010 than was noted for second generation antipsychotics. From 2003-10, a greater proportion of the northeast population used antipsychotics compared to other regions. The number of antipsychotic users increased most rapidly in the western U.S.
Conclusions: Antipsychotic use increased from 2003-2010. Antipsychotics are most commonly prescribed to whites, females, and the in the northeast. The antipsychotic of choice appears to change over time and vary based on user demographics. These data indicate antipsychotic use among those 18 or under is increasing more rapidly compared to other age groups. Further analyses are required to determine the conditions for which these are prescribed and potential recommendations for prescribing practices.

**NR5-70**
**ANTIPSYCHOTIC PRESCRIPTION PATTERNS IN THE UNITED STATES FROM 2003-2010**
*Lead Author: Samuel J. Ridout, M.D., Ph.D.*
*Co-Author(s): Kathryn K. Ridout, M.D., Ph.D., Junjia Zhu, Ph.D.*

**SUMMARY:**
Antipsychotic prescribing habits have received increased attention after some reports suggested they may be over-prescribed in certain populations. The medical expenditure panel survey (MEPS) database is a set of large-scale surveys of families, individuals, medical providers, and employers across the United States providing a complete dataset on the cost and use of health care and health insurance coverage. The purpose of this study was to examine prescribing patterns of antipsychotics using the MEPS database from 2003-10 and the purpose of these prescriptions.

Methods: Data from 2003-10 were collected from the MEPS database (n=~35,000 per year). The data were extracted and assembled, the prescription file linked to the personal level file by each patient's unique ID. Prescription events are recorded by reporting pharmacies in the database and the data weighted using the MEPS algorithm. Each prescription was associated with up to three ICD-9 codes. These codes were grouped into two categories: psychiatric disorder or medical condition (de-

fining psychiatric disorder as any condition found in the DSM-IV). Analyses were done using SAS software version 9.3 (SAS Institute, Cary, NC, USA) and R programming language version 2.15.2 (R Foundation).
Results: Between 2003-10, the most commonly prescribed antipsychotic to patients varied between risperidone, quetiapine, and aripiprazole. There was an overall trend of increasing antipsychotic prescriptions between 2003 and 2010 (p=0.003). The number of antipsychotic prescriptions increased between 2003-2009 by an average of 8.3%, but decreased between 2009-2010 by 8.5% (898,007). This decrease was mainly due to decreased prescriptions for aripiprazole and quetiapine, which decreased by 23% and 20% in 2010 compared to 2009, respectively. While the number of second generation antipsychotic prescriptions increased from 2003 to 2010 by 87%, first generation antipsychotic use decreased by 47% over this same time period.
Between 2003-10, the majority of antipsychotic prescriptions were for psychiatric illnesses (62-83% of all antipsychotic prescriptions). Until 2010, the majority of first generation antipsychotic prescriptions were written for medical conditions (51-60%). Quetiapine was the most common second generation antipsychotic prescribed for non-psychiatric indications, (~30% of prescriptions written for medical conditions 2003-10).
Conclusions: The total number of antipsychotic prescriptions for patients has increased from 2003-10, but exhibits variation year to year in the antipsychotic of choice and what the antipsychotics are prescribed for. These changes in prescribing patterns likely reflect changes in the FDA-approved uses and age limits, study results, and the preferences of the field. These data may also reflect the need for increased education of non-psychiatric providers or the need for further research on the benefits and harms of antipsychotic off-label use.

**NR5-71**
**THE RABBIT HOLE OF ALTERED MENTAL STATUS**
*Lead Author: William D. Rumbaugh Jr., M.D.*
*Co-Author(s): Rohul Amin, M.D., Patcho Santiago, M.D.*

**SUMMARY:**
In this case, we will present a complicated medical patient for whom the psychiatric consultation and liaison service was consulted for questions regarding “altered mental status.” The patient had a notable history of hypertension, type II diabetes mellitus, and chronic adrenal insufficiency. He was admitted for dehydration secondary to 10 days of nausea and vomiting. After initial fluid resuscitation, the patient received intravenous methylprednisolone for a polyarticular gout flare. Within 24 hours, he had been transferred to the medical ICU for markedly elevated blood sugar, paranoia, and visual hallucinations. After a more thorough history was obtained, it was found that his hallucinations were likely due to Charles Bonnet syndrome, and laboratory investigation revealed a positive RPR. We will describe our diagnostic thought process for this case, our management, and the psychiatric implications of systemic steroids in the complicated medical patient.

**NR5-72**
**ANTIDEPRESSANT RESPONSE IN THE TREATMENT OF SUBSYNDROMAL DEPRESSION IN MIDDLE-AGED AND OLDER PATIENTS WITH SCHIZOPHRENIA.**
*Lead Author: Sohag Sanghani, M.D., M.P.H.*
*Co-Author(s): John Kasckow, M.D., Ph.D., Shahrokh Golshan, Ph.D., Sidney Zisook, M.D.*

**SUMMARY:**
OBJECTIVE:
It has been shown (in a double blind placebo controlled trial) that citalopram augmentation of antipsychotic treatment can significantly improve depressive symptoms within 12 weeks in middle aged and older outpatients with schizophrenia and subthreshold depression. The goal of this report is to examine the time patterns of response to citalopram in this population. In addition, we examined whether baseline levels of depression impacted time to response.
METHOD:
In this placebo-controlled trial, 212 outpatients, > or = 40 years old with DSM-IV-diagnosed schizophrenia or schizoaffective disorder and subthreshold depressive symptoms were randomly assigned to flexible-dose citalopram (n = 109) or placebo (n = 103) augmentation of their antipsychotic for 12 weeks. This was a 2 site trial at the San Diego VA/UCSD and Cincinnati VA/U Cincinnati. Depression was measured with the Calgary Depression Rating Scale (CDRS). Rating scales were administered every week for the 1st month, then every other week in the 2nd month and then at the end of the 3rd month. We defined a responder as an individual who had at least a 50% improvement on the CDRS. Among responders to active medication, the time to response and the response patterns were examined.
RESULTS:
Overall 94(86%) of participants treated with citalopram responded during the 12 weeks. 43/91 (47%) responded by the first week and another 23 (25%) responded at two weeks. At weeks 3, 4, 6, 8 and 12 an additional 8, 10, 4, 1 and 2 responded. Among those 43 participants who responded at week 1, 39 (91%) continued to be responders at week 2 and 28 (65%) continued to be responders at week 3. For those 43 who responded on week 1 of the trial, the mean number of weeks these individuals were classified as responders was 7.2. For those 23 who first responded on week 2 of the study, the mean number of weeks they were classified as responders was 5.2. About 10% of those who met the response criteria at week 1 did not subsequently meet the response criteria during the entire study period of 12 weeks. At each week for individuals who responded the first time, there were no significant differences among CDRS scores at baseline.
CONCLUSIONS:
Response generally occurred early (within the first 2 weeks), but often was not sustained. Severity of depression at baseline does not appear to be associated with time to first response. When treating this population, these preliminary results imply that it is important for clinicians to closely monitor patient progress until sustained remission is achieved.
The views do not reflect the views of the US government or that of the US Department of Veterans Affairs.

**NR5- 73**
**MATERNAL WARMTH AND DEVELOPMENT OF PSYCHIATRIC DISORDERS: A LONGITUDINAL STUDY AMONG PUERTO RICAN CHILDREN**
*Lead Author: Olga Santesteban, M.S.*
*Co-Author(s): Hector R. Bird, MD, Glorisa Canino, PhD; Cristiane*

*S. Duarte, PhD, MPH.*

**SUMMARY:**
OBJECTIVE: To examine the prospective association between maternal warmth and psychiatric disorders in Puerto Rican children over the course of three years. BACKGROUND: According to the parental acceptance-rejection theory (PARTeory, Rohner, 1991), children who perceive rejection have poor psychological adjustment presenting more emotional and behavioral problems like depression, delinquency, violence and conduct disorders. The impact of maternal warmth among Puerto Rican children is expected to be strong, given the importance of family relationships for this ethnic group. METHODS: Sample: This is a secondary analysis of the Boricua Youth Study which assessed yearly (3 times) Puerto Rican children aged 5-13 in two different sites: San Juan (Puerto Rico) and the South Bronx (NY), N=2,491 (Bird et al., 2007). Only subjects who participated in waves 1 and 3 were included in this analysis (n=2161). Main Measures: a) Maternal warmth and acceptance (Parent report) is a 13-item measure (answered on a 4-point Likert-type scale) adapted from the "Hudson's Index of Parental Attitudes" (Hudson, 1982); b) Child Psychiatric Disorders (Parent report): Parent version of the Diagnostic Interview Schedule for Children-IV (DISC-IV) (Shaffer et al. 2000) was used to asses children's disorders; c) Demographic factors: Child gender; child age; family income; d) Other parental factors: psychopathology; Data Analysis: Logistic regression analysis was carried out relating the likelihood of the disorder (depression, anxiety, Disruptive Behavior Disorder or ADHD,) to maternal warmth across waves adjusting for potential confounders as demographics, other child psychiatric disorders and parental psychopathology. RESULTS: There were no significant differences in rates of psychiatric disorders along the 3 waves or by site (with the exception of DBD in w3). We calculated adjusted (AOR) and 95% confidence intervals (95%CI) for the relation between maternal warmth at wave 1 and the presence of child disorder (Depression, Anxiety, Disruptive Behavior Disorders (DBD) or ADHD) at wave 3. There were statistically significant prospective associations between high levels of maternal warmth and decreased likelihood of having depression (AOR=0.22; 95%CI=0.09-0.53, p<.001), anxiety (AOR=0.43; 95%CI=0.22-0.82, p<.05), DBD (AOR=0.18; 95%CI=0.10-0.32, p<.000) and ADHD (AOR=0.40; 95%CI=0.23-0.68, p<.001), adjusting for demographic, other parental and child factors. CONCLUSIONS: Maternal warmth is a protective parental factor against psychological disorders in Puerto Rican children. These results are consonant with PARTheory, which supports the relevance of maternal warmth for Puerto Rican children. Implications for interventions are discussed.

**NR5- 75**
**LATINO ETHNIC IDENTITY AS A PROTECTIVE FACTOR IN EARLY CHILDHOOD**
*Lead Author: Maria A. Serrano-Villar, M.S.*
*Co-Author(s): Esther J. Calzada, Ph.D.*

**SUMMARY:**
This study examined child ethnic identity development and its association with child functioning among young Latino children enrolled in prekindergarten and in kindergarten schools. Participants were 4 – 5 year old children (N=678) and their families and teachers. Children completed a questionnaire to assess their ethnic identity. Teachers and mothers reported on children's externalizing, internalizing and adaptive behavior at school and in the home. Children's ethnic identity does appear to be emerging at this young age, in ways that may depend on their gender and ethnicity and was found to be associated with better adaptive behavior and fewer externalizing and internalizing problems, according to parent and teacher reports. Moreover, moderated effects indicated that the ethnicity of the children was an important factor to consider in the association between ethnic identity and functioning. During early childhood, ethnic identity may be an important protective factor that can promote the behavioral functioning and mitigate the negative effects of socioeconomic disadvantage experienced by many Latino children.

**NR5-76**
**TECHNOLOGY-BASED COGNITIVE BEHAVIORAL THERAPY FOR THE TREATMENT OF DEPRESSION IN ADOLESCENTS AND YOUNG ADULTS: A SYSTEMATIC REVIEW**
*Lead Author: Katherine M. Shea, M.D.*
*Co-Author(s): Cara V. Baskin, B.S., Conor A. Richardson, B.A., Ajithraj Sathiyaraj, B.A., Robin J. Larson, M.D., M.P.H.*

**SUMMARY:**
Background: There is growing interest in using technology-based cognitive behavioral therapy (CBT) to treat adolescent depression, but efficacy and safety must be understood before widespread implementation.
Objective: To assess the efficacy and safety of technology-based CBT (techCBT) for the treatment of depression in adolescents and young adults.
Search Methods: We searched CENTRAL, MEDLINE, PsycINFO, and the Current Controlled Trial registry from inception through October 2013 using no limits. We reviewed references of relevant articles.
Selection Criteria: Randomized controlled trials comparing 1) techCBT versus waitlist, 2) techCBT versus treatment as usual (TAU), or 3) techCBT plus TAU versus TAU, in adolescents or young adults with depression.
Data Collection and Analysis: Two reviewers independently assessed methodological quality and extracted data. Within each comparison, we used random effects to calculate pooled standardized mean differences (SMD) and relative risks (RR). Change in depressive symptom scores were measured at the end of the intervention (2-8 weeks) and at subsequent follow-up (8-20 weeks).
Main Results: Of 572 records screened, seven trials were included. Three trials comparing techCBT to waitlist (n=97) demonstrated greater reductions in depressive symptoms at post-intervention in the techCBT group, however the pooled finding of usable data was not statistically different (SMD -0.80, 95%CI -2.00, 0.39, 2 trials), and there was no difference between study arms in the trial that reported change at follow-up (SMD 0.03, 95%CI -0.74, 0.80). Based on one trial, subjects in the techCBT group had higher rates of remission (75% versus 42.7%, RR 1.80, 95%CI 0.88, 3.68) and response (85% versus 42.7%, RR 2.04, 95%CI 1.02, 4.08), compared to waitlist. One trial compared techCBT to TAU (n=187). Results were similar between study arms for all outcomes: depressive symptoms at post-intervention (SMD -0.14, 95%CI -0.44, 0.16) and follow-

up (SMD -0.10, 95%CI -0.40, 0.21); rates of remission (44.7% versus 35.5%, RR 1.26, 95%CI 0.88, 1.80) and response (59.6% versus 54.8%, RR 1.09, 95%CI 0.85, 1.39). While three trials comparing techCBT plus TAU versus TAU alone (n=518) found no difference in depressive symptoms at post-intervention (SMD -0.05, 95%CI -0.34, 0.23, 2 trials) or follow-up (SMD -0.31, 95%CI -0.73, 0.11, 3 trials), techCBT plus TAU led to significantly greater rates of remission (56.2% versus 19.5%, RR 2.88, 95%CI 1.95, 4.26, 1 trial). The two studies that reported safety data found no differences between study arms.
Authors' Conclusions: TechCBT may offer an effective alternative or adjunct for the treatment of depression in adolescents and young adults, however current evidence is limited by the small number of published studies, small sample sizes, and wide variation in technology and co-interventions.

**NR5- 77**
**DOES MIRTAZAPINE MAKE PROGRESS WORSE IN DIABETIC PATIENTS UNDERGOING NATURALISTIC TREATMENT?**
*Lead Author: Hoorim Song, M.D.*
*Co-Author(s): Young Sup Woo, MD; Hee-Ryung Wang, MD; Inhee Shim, MD; Tae-Youn Jun, MD; Won-Myong Bahk, MD*

**SUMMARY:**
Objectives: Mirtazapine is known to induce weight gain and possibly lead to exacerbation of diabetic profiles. However, many cases of diabetic patients complaining insomnia and depression were treated with mirtazapine in the clinical situations. Thus, this study aimed to assess any negative effects that treatment with mirtazapine may incur in diabetic patients.
Methods: This study included 33 patients enrolled in naturalistic diabetes treatment that had also been diagnosed with depression and prescribed mirtazapine at least for 6 months. Another 33 diabetic patients who had not taken any psychiatric medicines were included as a control group. Body mass index (BMI), fasting plasma glucose (FPG), HbA1c, total cholesterol, triglyceride levels, high density lipoprotein (HDL), and low density lipoprotein (LDL) were assessed at baseline, 3 months, and 6 months.
Results: The dose of mirtazapine at baseline was 24.3 ± 14.0 mg/day in the mirtazapine group and the two groups did not differ in any baseline characteristics except for total cholesterol levels. BMI increased in both groups and the change in the mirtazapine group (1.0 ± 0.6 kg/m2) was significantly greater than in the control group (0.3 ± 0.4 kg/m2, p<0.001) at 6 months. Only the control group exhibited a decrease in FPG, while both groups showed a decrease in HbA1c, LDL, and total cholesterol, an increase in HDL, and no change in triglyceride levels. None of the differences between the groups were statistically significant.
Conclusions: Mirtazapine increased the weight gain of diabetic patients; however, other diabetic and metabolic markers generally did not worsen during the 6-month treatment period. These results suggest that, at least in the short-term, mirtazapine is safe for diabetic patients in a stable state and are undergoing appropriate diabetic treatment.
Key words: mirtazapine, diabetes, BMI, fasting glucose, HbA1c

**NR5-78**
**AN EVALUATION OF THE RISK FACTORS, SYMPTOMATOLOGY, TREATMENT METHODS AND LONG-TERM PROGNOSES OF POSTPARTUM PSYCHIATRIC DISORDERS**
*Lead Author: Ayca Suslu*
*Co-Author(s): Nihat ALPAY M.D. - Psychiatrist, Evrim ERTEN M.D. - Psychiatrist, Nesrin Buket TOMRUK M.D. - Psychiatrist*

**SUMMARY:**
Objective: The aim of this study is to evaluate the risk factors, symptomatology, treatment methods and long term prognoses of postpartum psychiatric disorders.
Method: All 34 women, who participated in this study, were admitted to Bakırkoy Prof. Dr. Mazhar Osman Research and Training Hospital for Psychiatry, Neurology and Neurosurgery between 2000 and 2007, with an axis I disorder with postpartum onset within the first 6 months after delivery. First, the hospital files of the index admissions of these patients were examined. Second, by interviewing the patients and their close relatives a cross check has taken place over the index episode diagnosis, socio-demographic factors, and the severity of illness at that episode. Then course of the postpartum disorder in time, any changes in initial diagnosis and treatment modalities were determined. This data (socio-demographic data, psychiatric history in 1st degree relatives, reproductive history and history of delivery, the risk factors, symptomatology, diagnosis and treatment method during and after the first admission and any additional deliveries following the first admission and related information) has been used to build up the "Patient follow-up form". SCID-I, Hamilton Depression Rating Scale, Young Mania Rating Scale, Brief Psychiatric Rating Scale have been applied to all 34 women during the interview.
Results: Women who were admitted to hospital with first time postpartum symptoms were young, married and primiparous. 41,2% of them had mood disorders in their family, more than 60% of them experienced postpartum blues, more than 75% described to have experienced psycho-social stress factors, more than 80% had their postpartum episode in the first month after delivery, more than 50% had suicidal thoughts, 32,4% had infanticide thoughts and 47,1% admitted to having obsessive thoughts related to their infants. 15 women had no sign of any psychopathology during 58,33 (SD: 19,41) months after their first admission. 79% of the 19 women, who still suffered from any form of disorder, were found to have bipolar disorder after applying SCID-I during the interview. 5 of 9 women (56%) had postpartum episode following childbirth after their first admission. All women were followed up for 2 to 7 years and 17 women, whose psychiatric illness continued, had an average of 4,06 episodes. Most of the episodes during the follow-up period were nonpuerperal. The average of nonpuerperal episodes were 2,9 (SD:1,7).
Conclusion: These results, contrary to the earlier studies in Turkey and similar to findings of research in other Western countries, reveal that postpartum triggered psychiatric disorders are diagnosed as affective disorders in the long term.

**NR5-79**
**PSYCHOTHERAPY USING AN INTERPRETER SERVICE**
*Lead Author: Mona Thapa, M.D.*
*Co-Author(s): William Lawson, M.D., Ph.D., D.F.A.P.A.*

**SUMMARY:**
Background:
With the globalization, huge number of people migrates from

one place to other to travel or to work. Not everyone who migrates have proficiency in the host country's language. Due to lack of laboratory tests, diagnostic interview is the primary mode of evaluation. One of the integral part of treatment modality of mentally ill patient is psychotherapy which involves communicating complex emotional issues. Language barrier is a big hurdle in psychotherapy when the therapist and patient do not understand each other's language. We can broadly solve this problem by using interpreter based sessions; however it has its own host of issues.

Methods:

A systematic literature review in English language using pubmed, google scholar in different peer reviewed journals and peer reviewed medical website were done. Key word search was "Psychotherapy using Interpreter".

Results:

Psychotherapy through an interpreter is feasible but not ideal. The chance of miscommunication between the therapist and client is much greater when an interpreter is used. The choice of words and phrasing sarcasm and/or humor are changed by the use of an interpreter or translator.

This risk is compounded by the likelihood that a therapist will use different interpreters for each therapeutic session. A lack of continuity increases the chance that an interpreter new to a therapist-client pair will fail to grasp the true meaning of what the parties are trying to convey. Two different interpreters might approach this task in completely different ways, leaving the patient confused as to what the therapist is inquiring.

Conclusions:

The therapy in a counseling session using an interpreter will never be the same as when both the therapist and the patient speak the same language. There are several deficit linguistic problems like interpreter's lack of knowledge on mental health, negative or deficit interpreting skill, clinician missing non translatable vocal and para-linguistic cues. However setting practice guidelines of interpreter like qualification of interpreter including mandatory minimum psychiatry base knowledge, fluency in both source of language, familiarity with patient's culture can overcome several obstacles.

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**NR5- 80**

**EVALUATION OF A MODEL OF INTEGRATED CARE FOR PATIENTS WITH CHRONIC MEDICAL AND PSYCHIATRIC ILLNESS**

*Lead Author: Aghaegbulam H. Uga, M.D.*

*Co-Author(s): Kathy Bottum, M.D., Ph.D., Vineka Heeramun, M.D., Shreedhar Kulkarni, M.D., Trinadha Pilla, M.D.*

**SUMMARY:**

Introduction: Recent studies indicate that more than 68% of persons with mental disorders report having one or more general medical disorders, and 29% of those with medical disorders have a comorbid mental disorder. Patients with chronic mental illness have a life span shortened by as much as 25 years, with 60% of this attributable to untreated chronic medical conditions. Despite these facts, systems of care that treat individuals with serious mental illness are separate from general medical systems of care. The integration of behavioral health and primary care has become increasingly important, with new emphasis on providing care that meets the spirit of the "Triple Aim": improving the experience of care, improving the health of populations, and reducing per capita costs of health care. This study compared the quality of life, satisfaction with care and utilization of care in patients with co-morbid chronic medical and psychiatric illness who are treated by doubly trained internist/psychiatrists at the same location with those who receive care from separate internists and psychiatrists at different locations, with a hypothesis that there is no difference between the two groups.

Methods: Eighty three participants were selected from the integrated medicine and psychiatry clinic (med/psych), and separate internal medicine and psychiatry clinics which are at different locations. Participants from the combined med/psych clinic were cared for by doubly trained internist/psychiatrists while those from the separate clinics received care from an internist and a psychiatrist at different locations. To qualify for the study, participants had to have comorbid chronic medical and psychiatric illness, have been a patient of the clinics for a least one year and be willing to participate by completing the study survey during a clinic visit. The survey included a brief questionnaire of demographic information, including number of medications prescribed, number of ER visits in last year and number of hospitalizations in the last year, SF12 Quality of Life Questionnaire and Satisfaction with Health Care Questionnaire. Data was analyzed using t-test and chi square test for statistical significance.

Results: Patients attending the integrated clinic reported being more satisfied with the care they received compare to the patients receiving care from separate clinics, when tested by t-test ($p = 0.03$ for satisfaction with medical care and $p = 0.007$ for satisfaction with psychiatric care). There was no difference in healthcare utilization and quality of life.

Discussion/Conclusion: This study demonstrates that integrated care for psychiatric and medical disorders improved the patients' experience of care and therefore may in the long run positively affect the outcome of care. There was no statistically significant difference in quality of life and healthcare utilization and may require a larger sample to demonstrate a difference.

**NR5-81**

**MANAGING NEUTROPENIA IN PATIENTS TREATED WITH CLOZAPINE**

*Lead Author: Celia Varghese, M.D.*

*Co-Author(s): Pedro Bauza, MD, Donald Kushon, MD, Nivedita Mathur, MD, Beeta Verma, MD and Sunil Verma, MD.*

**SUMMARY:**

Introduction: Clozapine, a serotonin 2A/dopamine D2 antagonist, was the first antipsychotic to be recognized as atypical and having few extrapyramidal symptoms. Clozapine is associated with a 0.5%–2% risk of developing life-threatening agranulocytosis and a 2%–3% risk of developing neutropenia. We will

discuss 2 patients taking clozapine who developed neutropenia that was managed so that the patients could be maintained on clozapine.
Case 1: 46-year-old African American man presented with chronic schizophrenia. His baseline symptoms that had recently worsened, including disorganized behavior and thought; auditory hallucinations; lack of self-care; responding to internal stimuli and thought disorder by loosening of associations. He was prescribed lithium 300 mg bid; aripiprazole 10 mg bid, changed to risperidone 1 mg bid. The decision was made to give him clozapine. His laboratory results were white blood cell count (WBC), 3.6; absolute neutrophil count (ANC), 2.1. Clozapine, slowly titrated up to a total dose of 375 mg; CBC within normal limits. Lithium gradually tapered and stopped; WBC dropped to 3.7, ANC to 1.6. Clozapine stopped and restarted with monitoring of CBC, gradually increased to 300 mg bid; lithium (300 mg bid) also added. The results were behavior and activities of daily living improved.
Case 2: Patient: 43-year-old white woman with history of chronic schizophrenia, in stable clinical remission, taking clozapine for 10 years; diagnosed with hepatitis C virus infection; started on interferon. She developed neutropenia; clozapine was discontinued. WBC dropped to 2.3, ANC to 1.5, platelets to 109. She was given one dose of filgrastim 300 µg to increase her counts and restarted on clozapine, which was gradually increased to 175 mg qhs. Patient showed significant improvement with resolution of psychotic symptoms.
Discussion: Case 1 had been taking lithium before he was given clozapine, and his counts initially were within normal limits. While on clozapine when lithium was stopped, he developed neutropenia. It is well documented that lithium induces neutrophilia shortly after initiation of treatment. Case 2 had a history of schizophrenia that responded well to clozapine. Her neutropenia was precipitated by interferon. The use of filgrastim brought up her counts and allowed us to use clozapine. Both granulocyte colony-stimulating factor and granulocyte-macrophage colony-stimulating factor have been used in the treatment of clozapine-induced agranulocytosis.
Conclusion: Neutropenia does not have to be an absolute contraindication for the use of clozapine. Recognition of alternative ways to treat neutropenia while taking a patient's full clinical picture into consideration can yield methods to counteract this side effect. As the lone FDA approved medication for the management of treatment resistant schizophrenia, concerted attempts should be made by the healthcare team to avoid stopping clozapine for treatable neutropenia.

**NR5- 82**

**THE IMPACT ON THERAPEUTIC ALLIANCE IN OUTPATIENT PSYCHIATRIC TREATMENT WHEN USING ELECTRONIC DEVICES FOR NOTE TAKING**

*Lead Author: Kolby Walker, D.O.*
*Co-Author(s): R. Scott Babe, M.D.*

**SUMMARY:**

A large number of studies reveal that patients are showing an acceptance of computer use in clinical care. With the adoption of electronic medical records, the trend of using electronic devices in clinical work flow has dramatically increased, although barriers in using electronic medical records remain. Among these are effects on eye contact, time with the patient, and clinical workflow. We found no studies which looked exclusively at the effect of computer use for active note taking, and how that may impact the relationship between the patient and his or her psychiatrist.
The therapeutic alliance between the mental health provider and patient was measured after the first four encounters using a validated likert scale. The provider was randomly selected to use either computer noting taking or paper noting taking on follow-up session two and 3, then switch to the alternative on the session 4. After session 4, the patients were asked 3 questions: 1)Did you notice the difference with the switch from note taking method? (i.e. computer vs no computer); 2)Do you feel this switch had an impact on the quality of care you received? 3)Which method of note taking do you prefer your psychiatrist or therapist to use?
Individual patient response is varied somewhat and with some being quite accepting.
Both statistical analyses of the data along with individual comments will be presented.

**NR5-83**

**"CLER" CONSULTATION COMMUNICATION: THE 5C'S AND IMPLICATIONS FOR PSYCHIATRY RESIDENCY TRAINING**

*Lead Author: Allison M.B. Webb, M.A.*
*Co-Author(s): Chad S. Kessler, MD, MHPE, Patcho N. Santiago, MD, MPH*

**SUMMARY:**

Introduction: Communication skills are invaluable in healthcare and particularly in Psychiatry. Despite this, root cause analysis has found that errors in communication account for up to 80% of hospital based adverse patient outcomes (JCCTH, 2012). Thus, there is increasing emphasis on formally training and evaluating resident physicians in communication skills. In fact, the Clinical Learning Environment Review (CLER) program, an important component of the ACGME's next accreditation system, specifically evaluates residents in transitions in care and patient safety (ACGME, 2013).
Method: A novel communication model for consultation, studied in Emergency Medicine residents called the 5C's demonstrated increased effectiveness of communication during consults (Kessler, 2012).. The 5C's model includes Contact, Core Question, Communicate, Collaborate, and Close the Loop. We propose that psychiatry residents would benefit from learning the 5C's model due to their commonly performed role as consultant-liaisons. Although the previous research trained and evaluated those physicians calling the consult, it is hypothesized that training consultants in the model will further enhance communication during a consultation and positively impact patient outcomes. Involving psychiatry residents in evaluation of the model will also help clarify and expound on the role that consultants play in communicating during a consultation.
Discussion: Future research should evaluate the applicability of the 5C's model in multiple specialties. Ideally, all GME programs will adopt the 5C's model as a standard method for communicating during consultations. The 5C's is a tangible and effective step toward meeting CLER's expectations for all residents, ultimately improving the quality of care provided to patients.

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**NR5-84**

**IMPACT OF MAOA-UVNTR POLYMORPHISM AND STRUCTURAL ALTERATION IN THE ORBITAL FRONTAL CORTEX AND ANTERIOR CINGULATE CORTEX IN FEMALE MDD PATIENTS**

*Lead Author: Eunsoo Won*
*Co-Author(s): Min-Soo Lee, Yong-Ku Kim, Byung-Joo Ham*

**SUMMARY:**
Background: Recent studies have suggested MAOA-uVNTR polymorphism to be involved with major depressive disorder (MDD), and has been found to have influence on brain structure such as anterior cingulate cortex (ACC), and orbitofrontal cortex (OFC) in healthy subjects. However, few studies have examined the influence of MAOA-uVNTR polymorphism on structural brain alterations in MDD. In this study, we investigated the possible association between MAOA-uVNTR polymorphism and cortical thickness of the ACC and OFC in female MDD patients. Methods: 81 female patients with MDD and age, sex, and ICV matched 50 healthy controls were included. All participants were genotyped for MAOA-uVNTR polymorphism and subjected to T1-weighted structural magnetic resonance imaging (MRI). An automated procedure of FreeSurfer was used to analyze difference in cortical thickness of the ACC and OFC according to genotype, in MDD patients and healthy controls. Results: MDD patients with homogenous low-activity MAOA alleles (2R/3R, 3R/3R) showed a significantly thinner cortex in the left OFC ($F(1,79)=5.962$, $p=0.017$) compared to high-activity MAOA allele (3R/4R, 4R/4R) carriers. Among healthy controls no significant difference in cortical thickness was detected. Conclusions: We observed a decrease in cortical thickness of the left OFC according to MAOA-uVNTR polymorphism in female MDD patients, and not in healthy controls. Our study might help explain the neurobiological mechanism of MDD by elucidating structural changes in the brain of MDD patients influenced by genotype.

**NR5-85**

**DOES AGE MATTER? THE IMPACT OF AGE AND PSYCHIATRIC FACTORS ON BARIATRIC SURGERY OUTCOMES**

*Lead Author: Shira Yufe, B.A.*
*Co-Author(s): Marlene Taube-Schiff, Ph.D., C. Psych., Christopher Meaney, MSc., Sanjeev Sockalingam, M.D. (order of co-authors)*

**SUMMARY:**
Introduction: Bariatric surgery is a recognized treatment for severe obesity; however, studies of weight loss outcomes in young adults following surgical intervention for weight loss (i.e., bariatric surgery) are limited. Given the known developmental stressors faced by this age group and high rates of psychiatric co-morbidity, it is important to better understand the impact of undergoing bariatric surgery. Therefore, the objectives of the present study were to: (1) compare percent total weight loss (one-year %TWL) in young adult bariatric patients (aged 18-25 years) as compared to older adults (≥25 years) matched controls (matched on gender and pre-surgery BMI); and (2) to assess the impact of pre-surgery psychiatric covariates (lifetime history of an Axis I disorder, mood disorder, or eating disorder) on %TWL after adjusting for age. Methods: Consented young adults (n=16) who attended a follow-up appointment one-year post surgery at the Toronto Western Hospital Bariatric Surgery Program were identified from a psychosocial database. Consented older adult controls (n=147; matched on gender and pre-surgery BMI) were selected from the same database. All patients (n=163) completed the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 Scale (GAD-7), Eating Disorder Examination Questionnaire (EDE-Q) and were assessed for the presence of a lifetime history of any psychiatric illnesses using the MINI-International Neuropsychiatric Interview. Preliminary analyses were conducted using a linear mixed effect model to assess the impact of these covariates on %TWL. Results: We found that mean %TWL is significantly greater in younger adults (-35.49, SE=1.86) compared to older adults (-28.41, SE=0.72) ($p=0.0004$). Exploratory analyses suggested that in older adults, psychiatric co-morbidity (past Axis I disorder) was associated with greater %TWL (-28.95) compared to those without (-27.69). In younger adults, psychiatric co-morbidity was associated with a lower %TWL for patients with a past Axis 1 diagnosis (-31.79) compared to those without (-42.27). Similar results were found in younger adults with a lifetime history of a mood disorder such that presence of this psychiatric co-morbidity was associated with a lower %TWL (-30.91) compared to those without (-37.81). There was no significant impact of eating pathology (EDE-Q) or self-reported measures of anxiety (GAD-7) and depression (PHQ-9). Conclusions: Our results indicate that age is an influential factor in total weight loss one year following bariatric surgery. Exploratory analyses suggest psychiatric history may play a role in weight loss outcomes differently depending on the age of the patient. This could be the result of developmental differences in seeking post-operative care after surgery to ensure proper management of mental health care issues.

**NR5-86**

**PEER SUPPORT, DEPRESSIVE SYMPTOMS, AND SUICIDAL IDEATION AMONG YOUNG ADULTS**

*Lead Author: Emily Yung, M.Sc.*
*Co-Author(s): Erika Dugas, M.Sc., Nancy C.P. Low, M.D., Jennifer O'Loughlin, Ph.D.*

**SUMMARY:**
Background:
Depression is now the leading cause of disability in the developed world and affects up to 15-20% of adolescents and young adults in population-based surveys. Young adults face a unique set of major life challenges such as establishing romantic, work, and academic relationships, and financial independence, all influencing their sense of personal security and belonging and increasing the vulnerability to develop mental illness.
With the onset of most mental disorders occurring by age 24 years, seeking appropriate help is imperative to prevent or re-

duce impairment. However, less than 20% of young adults with a mental health illness will receive the help they need. As peers engage with one another both in and outside the classroom, they have the opportunity to notice early signs of concern and more serious distress in another peer. Young adults who are suicidal tend to not only show warning signs that others can recognize but also turn to a friend for help. Thus, peers who are supportive may be a group who have the potential to play a significant role in alleviating distress of another peer.
Objectives:
To test if peer social support is associated with (1) depressive symptoms and (2) suicidal ideation in a population sample of young adults.
Methods:
Data were drawn from the Nicotine Dependence in Teens Study, a prospective school-based cohort in Montreal. The analytic sample consisted of 781 young adults (mean age = 24.0 years, SD = 0.7) who responded to mailed self-report questionnaires regarding number of close friends ("how many close friends do you have; people you feel at ease with and can talk to about what is on your mind?"), depressive symptoms in the past 2 weeks using the Major Depression Inventory, and suicidal thought in the past year. The associations between peer support (exposure) with depressive symptoms and suicidality (outcomes) were examined in multiple linear regressions.
Results:
The number of close friends ranged from 0 to 20 (mean = 5.4, SD = 3.0). The greater number of friends was associated with less depressive symptoms (B = -.25, p = .005). With respect to suicidality, the more friends was associated with less suicidal ideation (B = -.01, p = .017).
Conclusions:
More peer support was associated with less depressive symptoms and less suicidality in young adults. Thus, peer support should be considered in the conceptualization of preventative interventions in promoting mental health among young adults.

**NR5- 87**
**MATERNAL PREPUBERTAL ADVERSITY PREDICTS GESTATIONAL AGE AT DELIVERY, INFANT BIRTHWEIGHT, AND INFANT HEAD CIRCUMFERENCE**

*Lead Author: Kathryn M. Zagrabbe, A.B.*
*Co-Author(s): Tracy L. Bale, Ph.D., C. Neill Epperson, M.D., Deborah R. Kim, M.D., Samuel Parry, M.D., Mary D. Sammel, Sc.D., Eileen Wang, M.D.*

**SUMMARY:**
Introduction: Prepubertal adversity can have lasting impact on the maternal hypothalamic-pituitary-adrenal (HPA) axis, which may subsequently influence the fetal HPA axis and birth outcomes. As part of a longitudinal study examining the effect of maternal HPA axis dysregulation on the fetal and infant HPA axis, we investigated the effects of maternal prepubertal adversity and prenatal psychosocial stress on gestational age at delivery, infant birthweight, and infant head circumference.
Methods: One hundred and fifty-five pregnant women 8-17 weeks gestation were recruited from University of Pennsylvania OB/GYN practices. Eligible participants were ≥ 18 years old with no active psychiatric diagnosis, no serious medical illness, and no history of preterm birth. One hundred and three women were enrolled. Participants completed the Adverse Childhood Experience Questionnaire (ACE) and the Perceived Stress Scale (PSS). Their obstetric and infant records were examined for maternal and neonatal outcomes. Data regarding gestational age at delivery, infant birthweight, and infant head circumference are presented here. Univariable linear regressions were used to identify the roles of maternal prepubertal adversity and prenatal psychosocial stress in predicting gestational age at delivery, infant birthweight, and infant head circumference. Multivariable linear regressions were performed to account for maternal age, BMI, parity history, race, and pregnancy complications in predicting delivery outcomes. Maternal substance abuse was not included as the number of women who abused substances during pregnancy was too small.
Results: Of the 103 enrolled women, 61.2% had a prepubertal ACE score of 0, 21.4% had a prepubertal ACE score of 1, and 16.5% had a prepubertal ACE score of 2 or more. Prepubertal ACE score was positively correlated with PSS score ($r = .35$, $p < .001$). In univariable regression analyses, maternal prepubertal ACE score of 2 or more significantly predicted earlier gestational age at delivery ($p = .011$), lower infant birthweight ($p = .001$), and smaller head circumference ($p = .034$). Greater prenatal psychosocial stress significantly predicted lower infant birthweight ($p = .036$), but not gestational age at delivery ($p = .39$) or infant head circumference ($p = .36$). In multivariable regression analyses, maternal prepubertal ACE score of 2 or more significantly predicted lower infant birthweight ($p = .014$) and smaller infant head circumference ($p = .047$), but not gestational age at delivery ($p = 0.082$). Greater prenatal psychosocial stress did not significantly predict gestational age at delivery, infant birthweight, or head circumference (all p's > .079).
Discussion: Maternal prepubertal adversity is a significant predictor of poorer delivery outcomes, even when accounting for multiple maternal variables. Maternal prepubertal adversity may have an even greater effect on delivery outcomes than prenatal psychosocial stress.

**NR5-88**
**THE ACCEPTABILITY OF COMPUTER-ASSISTED THERAPY IN PREGNANT AND NON-PREGNANT WOMEN**

*Lead Author: Kathryn M. Zagrabbe, A.B.*
*Co-Author(s): Liisa Hantsoo, Ph.D., Deborah R. Kim, M.D., Catherine MacQueen, Mary D. Sammel, Sc.D., Jessica Snell, M.S.*

**SUMMARY:**
Introduction: Depression during pregnancy has been linked to serious adverse birth outcomes. Pregnant women report several barriers to accessing proper mental health treatment. Computer-assisted therapy (CAT) combines a multimedia computer program with abbreviated, in-office, one-on-one therapy. This study investigated the acceptability of CAT in pregnant and non-pregnant women and also looked at how psychiatric comorbidities may influence patient acceptability of CAT. Methods: 25 pregnant women at least 12 weeks gestation and 76 non-pregnant women participated. All participants were ages 18-45. Participants completed the Computerized Psychotherapies Acceptability Questionnaire using online REDCap electronic data capture tools. This questionnaire was designed specifically for this study to evaluate the acceptability of different computerized psychotherapies in comparison to traditional treatment modalities like medication management and talk therapy. Participants also completed the Patient Health

Questionnaire-9 (PHQ-9) and Edinburgh Postnatal Depression Scale (EPDS) online. In addition, a trained research assistant performed the Mini International Neuropsychiatric Interview (MINI) with each participant over the phone. Chi square analyses were used to measure the differences in therapy preferences between the two groups and among those with psychiatric illness. Results: The rates of EPDS and PHQ-9 scores ≥ 10 and the number of women meeting criteria for depressive disorders on the MINI did not differ between the two groups (all p's > .08). There was a significantly greater prevalence of anxiety disorders in the non-pregnant group (n = 22, or 29% of non-pregnant group) than in the pregnant group (n = 2, or 8% of pregnant group; p = .03). Both pregnant women (68%) and non-pregnant women (47%) ranked traditional talk therapy as their first-choice treatment when other treatments like medication management and computerized therapies were offered; the difference in preference between the two groups non-significant (p = 0.26). Pregnant women were significantly more likely to prefer CAT over medication (92% preferred CAT) than were non-pregnant women (70% preferred CAT; p = 0.03). Both pregnant women (80%) and non-pregnant women (66%) preferred talk therapy over CAT; the difference in preference between the two groups was non-significant (p = .18). Women without anxiety disorders were significantly more likely to prefer CAT over medication (81%) than women with anxiety disorders (54%; p = .006). The presence of a depressive disorder did not significantly influence treatment preferences (all p's > .66). Conclusions: CAT is an acceptable alternative to medication as treatment for depression in a female population. Pregnant women and non-anxious women are particularly likely to prefer CAT over medication as treatment for depression.

**NR5-89**

**UNDERSTANDING NATURALISTIC DATA ABOUT THE NYS SAFE ACT: LAW, PROCESS, CONTROVERSY, OUTCOMES, AND RESULTS OF A FREEDOM OF INFORMATION LAW REQUEST**

*Lead Author: Manish Zinzuvadia, M.D.*
*Co-Author(s): Charles W. Luther, M.D., Ami S. Baxi, M.D.*

**SUMMARY:**

Introduction:
In March of 2013, New York State (NYS) implemented its Secure Ammunition and Firearms Enforcement (SAFE) Act. This law substantially impacted psychiatric practice by requiring mental health professionals to report any patient who is "likely to engage in conduct that would result in serious harm to self or others" to local and state authorities. After review by the NYS Division of Criminal Justice Services (DCJS), the State may revoke gun licenses and confiscate known, licensed guns. The DCJS may deny future gun licenses for a period of five years. We sought to determine the number of guns confiscated, and licenses revoked or denied as a result of the SAFE Act. Further, the quantified impact of the law may vary between jurisdictions. We aim to contextualize the public health impact of the SAFE Act as it compares with other gun safety measures (e.g. gun buyback programs). We will review the law, its varied implementation, and the surrounding controversies.
Methods:
In order to quantify the impact of the SAFE Act from a public health perspective, we filed a Freedom of Information Law (FOIL) request to obtain the following data:

1. The number of SAFE reports filed in New York City categorized by borough and by hospital
2. The number of guns confiscated since the law's inception
3. The number of SAFE reports filed by county of NYS
4 The number of guns confiscated by county of NYS
5. The number of gun licenses by county of NYS
6. The number of gun licenses declined due to the SAFE Act

Results:
The analysis of the data gathered from the FOIL request will be compiled to show the distribution of SAFE Act reports filed and guns confiscated. These results will be organized by regions in NYS and NYC. We expect to receive the requested information by December 27, 2013.
Conclusion:
The NYS SAFE Act affects all mental health professionals in the State. Our research will allow us to compare the number of guns confiscated with the number of reports filed, allowing us to see how the law has tangibly affected different regions of NYS and different boroughs of NYC. The spirit of the law is to diminish firearm-related violence, but the myriad steps involved and people required to eventually confiscate a gun or revoke a license remain obstacles. There appears to be potential for improvement in the process, and further policy improvements may be warranted.

**NR5- 90**

**AUDIT-C SCREENING EFFECTIVENESS AND RESULTS IN PSYCHIATRIC INPATIENTS**

*Lead Author: Mario J. Hitschfeld, M.D.*
*Co-Author(s): Miguel L. Prieto, M.D., Kathryn M. Schak, M.D., Timothy W. Lineberry, M.D.*

**SUMMARY:**

Background:
Alcohol use disorders and hazardous drinking have significant impact on patient outcomes, and are highly associated with other psychiatric disorders, suicide attempts and death by suicide. Based on these factors, screening rates using a validated questionnaire for unhealthy drinking will be a mandatory outcomes metric for US psychiatric hospitals effective 1/1/2014. The AUDIT-C has been used for screening in our practice since 2008. We sought to identify response rates, distribution of scores by age groups, and process factors associated with obtaining or not obtaining surveys.
Methods:
This is a retrospective, single site, medical record review study. All admissions from 10/01/2008 to 9/30/2013 (total: 13,034) were part of original sample. 11,691 (89.7%) admissions had electronic medical record research authorization. Data was compared for subjects ≥15 years of age. Data obtained included age, sex, race, year of admission, reason for not completing assessment, and AUDIT-C scores. Positive AUDIT-C responses were ≥3 for women and ≥4 for men. Firearms access was obtained as a process proxy variable due to its low rate of omission on assessment from earlier research. Analysis of completion by year for AUDIT-C vs. firearms-access was used for clinical practice process analysis.
Results:
Of the 11,691 admissions, 42% were males, 87% were Caucasians, and the mean age was 39.7 ± 17.9 yrs. A total of 7,822 (67%) of admissions had AUDIT-C data available. Among these

responders, 2,187 (28%) had a positive AUDIT-C. There was an association between a positive AUDIT-C finding with male admissions (p<0.0001) and younger age (p<0.0001). There was an association between obtaining an AUDIT-C and older age (p<0.0001). There was no association between AUDIT-C response rate with either sex or year of admission. There was no association between the AUDIT-C being positive and year of admission. Compared to improvement in obtaining a firearms access response over time (p<0.0001), the AUDIT-C completion percentage did not improve over time (p<0.19). The vast majority of admissions (83%) without AUDIT-C data did not have reasons documenting why it was not obtained.
Conclusions:
A positive AUDIT-C was common (28%). Males were more likely to have a positive AUDIT-C score. Younger age groups were more likely to have positive score and more likely to not respond to survey. Completion rates in our sample did not show improvement over time. We anticipate based on our inpatient population that many admissions may not have been cooperative, had severe psychotic symptoms or cognitive problems impacting their ability to complete survey; however, this was not documented. For psychiatric hospitals implementing standardized alcohol screening and reporting data, it is important to define and document why patients are unable to complete survey or refuse to do so.

**NR5-91**

**PROTEOMICS AND DTI TRACTOGRAPHY ANALYSES FOR EVAULATING PPARΓ AGONIST TREATMENT FOR COCAINE DEPENDENCE**

*Lead Author: Nilesh S. Tannu, M.D., M.S.*
*Co-Author(s): Prashant Gajwani, M.D., Charles Green, Ph.D, Juan J. Herrera, Ph.D., Hasan M. Khader M, Ph.D., Scott D. Lane, Ph.D., Narayana A. Ponnada, Ph.D., M.Sc., Joy M. Schmitz, Ph.D.*

**SUMMARY:**
Background:
Cocaine is widely recognized as one of the most addictive and dangerous illicit drug in use today. The abuse of cocaine in the United States remains a major public health problem. Preclinical studies show that peroxisome proliferator-activated receptor gamma (PPARγ) agonists reduce cocaine cue reactivity in cocaine self-administering rodents. There is also some evidence that PPARγ agonists have neuroprotective ability in animal studies. Based on these studies it is hypothesized that the administration of pioglitazone in cocaine dependent Human subjects will reduce cocaine associated cue reactivity; reduce the relative reinforcing value of cocaine vs. other rewards; reduce impulsivity; increase fractional anisotropy (FA) on diffusion tensor imaging (DTI); and potentially reduce cocaine use and increase periods of sustained abstinence compared to placebo. Possibly pioglitazone will reinstate/repair the effect of chronic cocaine on the meso-limbic and/or cotico-limbic tracts as well as the proteomes of the associated limbic areas.
Methods:
The current study will take advantage of imaging and proteomics knowledgebase on cocaine dependence and expand it to further understand the utility of pioglitazone as a viable option for reversing the neuro-toxicity of cocaine dependence. The diffusion tensor imaging data from the human as well as rat model will be used in conjunction with the proposed proteomics analysis. The proteomics study compares control animals with the ones exposed to neurotoxic doses of cocaine, and cocaine plus pioglitazone. The DTI tractography compares the meso-limbic and cotico-limbic tracts in cocaine dependent Human subjects receiving pioglitazone with placebo.
Discussion/Significance:
Chronic cocaine dependence is associated with structural as well as functional changes in gray matter, including deeper structures such as dorsal and ventral striatum, and amygdalae. In most instances the volume of these structures gets affected as well. Some of these changes persist well after abstinence, suggesting a neurotoxic/degeneration mechanism. PPARγ and ERK form a complex in the cytosol of the hippocampus that is disrupted upon ligand activation, suggesting that ligand activation of PPARγ regulates ERK via a protein-protein interaction. It is possible that PPARγ and ERK may function in similar ways to control long-term drug-associated memories in hippocampus and other limbic cortico-striatal structures thought to underlie addiction and relapse vulnerability. Pioglitazone has been shown to reduce 6-hydroxydopamine induced microglia activation and loss of dopaminergic neurons- neuroprotective properties. The association of ERK and 6-hydroxydopamine signaling with respect to the changes of cocaine neuro-toxicity (liprin-alpha3, neuronal enolase, parvalbumin, ATP synthase beta-chain and peroxiredoxin 2), will be discussed.

**NR5-92**

**VALIDATION OF THE SOUR SEVEN QUESTIONNAIRE FOR DETECTING DELIRIUM IN HOSPITALIZED SENIORS**

*Lead Author: Saurabh Kalra*
*Co-Author(s): Richard Shulman, MDCM, FRCPC*

**SUMMARY:**
INTRODUCTION: Delirium is a common condition in hospitalized seniors with estimates ranging from 10% - 60% in this population. It is associated with an increase in average length of hospital stay, cognitive decline, functional decline, institutionalization and mortality. Our previous attempts to improve delirium detection by the nurses at the Mississauga Hospital using the gold standard detection tool, the Confusion Assessment Method (CAM) were unsuccessful. Reasons that may have accounted for this low detection included low nursing compliance with screening, language barriers, difficulties in administering CAM by nursing staff without mental health training, and difficulty assessing for delirium in patients with dementia particularly if the nurses did not have any prior knowledge of the patient. In response, we developed a new screening tool, The Sour Seven, an innovative and original 7-item questionnaire for formal and informal caregivers to screen for delirium that does not require any mental health training, prior knowledge of the patient, or questions posed directly to the patient; but is based on caregiver observation alone.
OBJECTIVES: To validate the Sour Seven against the CAM and a geriatric psychiatrist's assessment and develop scoring criteria for a positive delirium screen.
METHODS: Eighty hospitalized seniors over the age of 65 were recruited from three units (2 medical, 1 orthopedic) at the Mississauga Hospital. The student assessed the subjects daily using the CAM and posed the Sour Seven Questionnaire to the appointed caregiver (family or nurse) for up to a maximum of 7 days. Participants testing positive on the CAM and a random

sample of negatively CAM screened subjects were assessed by the geriatric psychiatrist, blinded to the student assessment. Statistical analysis was performed using the data of the participants that completed all three assessments.
RESULTS: The data from 19 subjects screening positive for delirium on CAM and 20 randomly selected CAM negative subjects was analyzed. The participants' mean age was 81.33 ± 8.9 years. The 7 questions on the Sour Seven questionnaire were individually analyzed and a weighted scoring was developed based on their relative risks for correctly predicting delirium when compared to the geriatric psychiatrist's clinical assessment. The maximum score on the Sour Seven Questionnaire is 18, and scores of 4 (sensitivity 89.5%, specificity 90%, positive predictive value (PPV) 89.5%), 6 (sensitivity 84.2%, specificity 95.0%, PPV 94.1%) and 9 (sensitivity 63.2%, specificity 100%, PPV 100%) were used to classify patients as having possible delirium, probable delirium and delirium respectively. A comparison between the assessments of informal caregivers versus nurses on Sour Seven showed no difference.
CONCLUSIONS: This pilot project suggests that the Sour Seven Questionnaire is a valid tool for detecting delirium in hospitalized seniors by any caregiver.

**MAY 06, 2014**

**NEW RESEARCH YOUNG INVESTIGATOR POSTER SESSION 2**

**NR7- 1**
**THE IMPACT OF CANNABIS ON THE FUNCTIONING OF COLLEGE YOUTH WITH PSYCHIATRIC DISORDERS**
*Lead Author: Meesha Ahuja, M.D.*
*Co-Author(s): Laura Whiteley M.D, Hannah Fegley, L.C.S.W., Larry Brown M.D.*

**SUMMARY:**
Introduction: Major psychiatric and substance use disorders most commonly begin, and are most prevalent, in young adulthood, and the number of college students seeking psychiatric care continues to rise. The concomitant abuse of substances has been linked to poorer clinical outcomes for young adults with psychiatric disorders such as increased hospitalizations, increased symptomatology, and poorer treatment adherence. Cannabis, in particular, is widely used on college campuses and many locales are decriminalizing its use, which suggests that its use may become even greater. Unfortunately, there is no research that examines the effect of cannabis on the scholastic and general functioning of college students in psychiatric care, which this study aimed to do.
Setting: The College Mental Health Program at Rhode Island Hospital receives psychiatric outpatient referrals from eight colleges in Rhode Island.
Methods: The charts of 113 patients seen in the past two years by one psychiatrist in the College Mental Health Program were reviewed by a second psychiatrist and ambiguities clarified with the treating psychiatrist. Information obtained included demographic variables, psychiatric diagnoses including substance abuse and/or dependence diagnoses, student standing (medical leave vs. active student) and GAF scores. Associations between variables were determined using t-tests and chi-square tests.
Results: 34% of the 113 youth (mean age 21, 67% female) in psychiatric care in the College Mental Health Clinic had comorbid substance abuse or dependence. 24% out of the 113 youth specifically had comorbid cannabis abuse or dependence. Those diagnosed with a cannabis disorder were more likely to be on medical leave from their school (46% vs. 13%, X2=11.89, p=.001), to have an overall lower functioning as measured by their GAF score (55.5 vs. 66.4, t=6.16, p<.001, Cohen's d effect size of 1.4) and to be diagnosed with a Bipolar disorder (47% vs. 19%, X2=5.63, p< .05) than those without a cannabis disorder. Those with Anxiety or Depressive disorders were less likely than those without to have a cannabis disorder (12% vs. 29%, X2=4.3, p<.05; 18% vs. 37%, X2=4.47, p<.05, respectively).
Implications: Cannabis is commonly used in college and these finding suggest that its abuse or dependence by those in psychiatric treatment is associated with greater functional impairment and greater likelihood of being on medical leave. Nearly half of those with Bipolar disorder had a cannabis disorder, suggesting the need for careful screening and prompt treatment. The high rate of cannabis use disorders among college students in psychiatric care warrants combined treatment approaches and should be widely available on or near campus.

**NR7- 2**
**ONLINE DIALECTICAL BEHAVIOR THERAPY (DBT), EFFECTIVE IN IMPROVING SYMPTOMS IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER**
*Lead Author: Nazanin Alavi, M.D.*
*Co-Author(s): Karen, Gagnon, R.N, Margo, Rivera, Ph.D*

**SUMMARY:**
Introduction: Borderline personality disorder (BPD) is a serious psychiatric disorder which is characterized by a pervasive pattern of instability in affect regulation, impulse control, interpersonal relationships, and self-image. Clinical signs of the disorder include emotional dysregulation, impulsive aggression, repeated self-injury, and chronic suicidal tendencies.
Dialectical Behavior Therapy (DBT) is a form of clinical behavior analysis used to treat people with borderline personality disorder and has been proven effective in a number of controlled research studies, especially in reducing suicidal and self-injurious behaviors, and the frequency of acute hospitalizations. Many patients suffering from the symptoms of borderline personality disorder are resistant to taking part in group psychotherapy, a core aspect of DBT.
With Internet use ever rising, offering the skills-building aspect of DBT online can provide an alternative treatment.
Method: The Personality Disorders Service at Queen's university provides specialized care to individuals suffering from personality disorders. Managing Powerful Emotions Group is a psycho-educational group offered for individuals who have difficulty with emotion regulation.
Participants applying for treatment were offered the opportunity to choose between the online format or live sessions of the Managing Powerful Emotions Group. In each of the 15 sessions of both the live and online groups, patients were provided with information about distress tolerance or emotion regulation skills (power-point format), homework assignments, templates for completing homework, and feedback regarding the previous week's homework from the group therapist. Participants were assessed by using a self-assessment questionnaire and

Difficulties in Emotion Regulation Scale (DERS) to measure six subscales of emotion regulation including nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity.
Results: The DERS scores among live and online groups were not significantly different before treatment. Statistical analysis showed that both online and live DBT significantly reduced DERS scores in all six categories, there was significant change in functioning and level of symptomatology in both groups after 15 weeks of treatment, and there was no significant differences in the changes in the scores in the live and online groups.
Conclusion: Despite the proven efficacy of psychotherapy, there are some barriers, including resistance to participating in live sessions, long wait-lists, and transportation challenges. With Internet use rising everyday, delivering online psychotherapy might provide alternative treatment. This is the first study that has examined online DBT in the treatment of borderline personality disorder.

**NR7- 3**

**A CASE REPORT AND REVIEW OF STIMULANT USE FOR ATTENTION DEFICIT SYMPTOMS FOLLOWING SPORTS-RELATED CONCUSSIONS**

*Lead Author: Emaya Anbalagan, M.D.*
*Co-Author(s): Rasha El Kady, M.D., Megan Vasile, Balkozar Adam, M.D.*

**SUMMARY:**
Introduction:
Concussions due to sports injuries are very common. It is estimated that 1.6 to 3.8 million concussions occur in the United States related to sports and recreational activities each year. A concussion is a milder form of a traumatic brain injury which results in a dysregulation of brain function affecting physical, emotional and neurocognitive abilities. Most symptoms resolve in days to weeks. Post concussive disorder occurs when the symptoms of a concussion do not resolve even after weeks or months, sometimes becoming permanent. We present a case of a patient who developed severe attention deficit in the post concussive state and review the management options available.
Case report:
Mr.L is an 18 year old male who had no significant past psychiatric history. He was a freshman in college and was having severe problems concentrating leading to his grade point average dropping from 4.0 to 2.0.
He had been a wrestler since he was 4 years old and through high school. Over the course of his wrestling years he had suffered about 9 concussions, most recently about 8 months ago. Following this, he started having severe attention difficulties. He had some attention issues the previous year after a concussion which had resolved. A detailed neuropsychological testing done three months afterwards had showed a near normal profile at that time. Six months after having the most recent concussion he was tested again. The results showed a marked decline in sustained attention, concentration and poor impulse control consistent with Attention Deficit Hyperactivity disorder combined type. A trial of stimulants and behavioral therapy was initiated. Initially he did not have an adequate response at the starting doses but then showed some improvement when the dose of the long acting Lis-dexamphetamine was increased gradually to 50mg daily.
Discussion:
Clear guidelines for the management of attention deficit symptoms in post concussive disorder are not available. There have been some studies showing an improvement in cortical recovery with methylphenidate immediately following concussions. Some reports showed that methylphenidate helped improve the speed of mental processing but not much improvement were reported in sustained attention or motor speed. A couple of studies have shown some benefits after using dextroamphetamines. Pharmacotherapy for attention deficit after concussion is common. One survey showed at least 8% of pediatricians prescribing stimulants for attention deficit after concussions.
Conclusion:
Stimulants can produce benefit in treating attention deficit symptoms in sports related concussion and post concussive disorder. Further research is required to study the course of the disorder and to firmly establish guidelines for course of treatment.

**NR7-4**

**THE SIGNIFICANCE OF THYROID HORMONES AS BIOMARKERS FOR PROGNOSIS AND BACLOFEN TREATMENT RESPONSE IN ALCOHOL-DEPENDENT-PATIENTS**

*Lead Author: Elie Aoun, M.D.*
*Co-Author(s): Carolina L. Haass-Koffler, PharmD., Robert M. Swift, M.D., PhD., Giovanni Addolorato, M.D., George A. Kenna, PhD., RPh., Lorenzo LeggioM.D., PhD.*

**SUMMARY:**
Thyroid hormones effects on alcohol use disorders (AUD) include a blunted increase of TSH in response to TRH, lower levels of fT3 and fT4 levels and downregulation of TRH receptors. These findings are more robust in subjects with co-occurring mood disorders and aggression. Baclofen's effectiveness for the treatment of AUD has been supported in many trials. This study aims at investigating dysregulations of thyroid hormones as biomarkers of AUD and relapse, and the effects of anxiety, depression and aggression on such interactions in a randomized controlled trial of baclofen for alcohol dependent subjects. 42 treatment-seeking subjects were assigned to baclofen 10 mg t.i.d., 20 mg t.i.d. or placebo in a 12-week double-blind placebo-controlled randomized clinical trial. The Timeline Follow Back (TLFB) was used to assess the number of drinks consumed during the study, and blood levels for thyroid hormones (TSH, free-T3 and free-T4) were taken. Additional questionnaires evaluated craving for alcohol (Penn Alcohol Craving Scale (PACS) and the Obsessive Compulsive Drinking Scale (OCDS) and its two subscales ODS for obsessions and CDS for compulsions) as well as anxiety (State and Trait Inventory (STAI)), depression (the Zung Self-Rating Depression Scale (Zung)) and aggression (the Aggressive Questionnaire (AQ)).
We found a dose dependent effect of baclofen on mean TSH level (1.15 µIU/mL for placebo, Vs 1.16 µIU/mL for Baclofen 10mg t.i.d. Vs 2.0 µIU/mL for baclofen 20mg t.i.d. $F(2,26)=3.5$, $p=0.045$). At baseline, we found negative correlations between TSH and STAI ($r=-0.342$, $p=0.031$), and AQ ($r= -0.35$, $p=0.027$), and positive correlations between fT3 and OCDS ($r=0.358$, $p=0.029$) and CDS ($r=0.405$, $p=0.013$). At week 12, abstinent subjects had a greater change in TSH than those who relapsed

(-0.4 Vs -0.25, F(1,24)=5.4, p=0.029) but not fT3 or fT4. Within subjects receiving baclofen, the change in TSH correlated with PACS (r=-0.512, p=0.025), OCDS (r=-0.528, p=0.02), ODS (r=-0.473, p=0.041), and CDS (r=-0.535, p=0.018) and the change in fT3 correlated with Zung (r=0.542, p=0.024) and AQ (r=0.504, p= 0.046). Among subjects receiving placebo, TSH at week 12 correlated with the number of drinks consumed during the study (r=0.758, p=0.029), OCDS (r=0.726, p=0.041) and ODS (r=0.723, p=0.042), and the change in fT4 correlated with Zung (r=0.805, p=0.016) and STAI (r=0.782, p=0.021).
In patients with AUD there is a significant correlation between thyroid hormones and craving, anxiety, depression and aggression. These correlations are maintained with baclofen treatment. We identified some evidence that such relationship could be strengthened by baclofen, and is dose dependent.
If confirmed in larger samples, these findings could be used as biomarkers for the severity of symptoms, and prognosis in AUD, and as predictors for treatment response with baclofen. Mechanistic studies are needed to shed light on the mechanisms of action underlying such associations.

**NR7- 5**

**APOPTOTIC MARKERS IN CULTURED FIBROBLASTS CORRELATE WITH BRAIN METABOLITES AND BRAIN VOLUME IN ANTIPSYCHOTIC-NAÏVE FIRST-EPISODE SCHIZOPHRENIA**

*Lead Author: Albert Batalla*
*Co-Author(s): Deborah Pareto, Ph.D., Patricia Gassó, Ph.D., Nuria Bargalló, M.D., Ph.D., Sergi Mas, Ph.D., Oriol Molina, M.D., Jose M Roca, M.D., Miquel Bernardo, M.D., Ph.D., Amalia Lafuente, M.D., Ph.D., Eduard Parellada, M.D., M.Sc., Ph.D.*

**SUMMARY:**
Introduction
Glutamatergic dysfunction is capable of activating apoptosis in neurons, which may lead to neuropil damage and the onset of psychosis. First-episode schizophrenia patients (FES) have shown increased susceptibility to apoptosis, which may contribute to the progressive gray matter loss observed in the disease. We hypothesized that changes in Glx (glutamate + glutamine) and N-acetylaspartate (NAA) (measured with proton magnetic resonance spectroscopy [MRS]) and grey matter (GM) volume alterations (computed by voxel based morphometry [VBM]) would correlate with apoptotic markers obtained from cultured fibroblasts in FES compared to healthy controls (HC).
Methods
The sample consisted of 11 antipsychotic-naïve FES recruited during the first hospitalization and 7 age- and gender-matched HC. All subjects underwent 3 Tesla MRI scanning, obtaining metabolite levels (using LCModel) in the anterior cingulate (AC) and the left thalamus (LT) from 10 FES and 6 HC, and structural images from 11 FES and 7 HC. Hallmarks of apoptotic susceptibility (caspasa-3 activity, phosphatidyl serine externalization and chromatin condensation [CC]), were measured in fibroblast cultures obtained from skin biopsies of all subjects after inducing apoptosis with staurosporine (STS) at doses of 0.25µM and 0.5µM. We compared MRS metabolites between FES and HC using a multivariate regression analysis. Bonferroni-adjusted partial correlations controlling for GM and for the week when the skin-biopsy was collected were conducted to examine the relationship between apoptotic markers and Glx and NAA levels in AC and LT. Structural differences and correlations with apoptotic markers across groups were computed by VBM, using p<0.05 family wise error correction (FWEc).
Results
We found no differences between FES and HC in metabolite levels in the AC or LT but we found negative correlations in the AC between Glx levels and CC after both apoptosis inductions (STS 0.5µM: r=-0.90,p=0.001; STS 0.25µM: r=-0.73;p=0.003), and between NAA and CC after STS 0.5µM induction (r=-0.76;p=0.002). When the analysis was performed by group, we found that the following negative correlations were only significant in the FES group: Glx and CC (STS 0.5µM: r=-0.90,p=0.002), NAA and CC (STS 0.5µM: r=-0.87,p=0.004), and NAA and CC (STS 0.25µM: r=-0.89,p=0.003). We did not find other correlations between Glx or NAA levels with other apoptotic markers in the AC. No significant correlations were found in the LT. No structural differences were found between FES and HC but we observed a negative correlation between GM volume in the bilateral supratemporal cortex and CC (STS 0.25µM and 0.5µM;p<0.05 FWEc). No other correlations between GM and apoptotic markers were found.
Conclusion
We reveal for the first time that peripheral markers of apoptotic susceptibility may correlate with brain metabolites, Glx and NAA, and grey matter volume in FEP and controls, which is consistent with neuroprogression in FEP.

**NR7- 6**

**ASSOCIATION OF COGNITIVE OUTCOMES AND REMISSION IN LATER LIFE DEPRESSION: A 12-MONTH LONGITUDINAL STUDY**

*Lead Author: David D. Bickford, B.A.*
*Co-Author(s): Ross Crothers B.A., Alana Kivowitz B.A., Derek Pisner B.A., Katie Tegenkamp B.S., J. Craig Nelson M.D., & R. Scott Mackin Ph.D*

**SUMMARY:**
Background: Fifteen percent of adults over the age of 65 suffer from Late Life Depression (LLD). Within those individuals, up to 60% experience cognitive impairment which represents one of the most debilitating aspects of the disorder. In a previous study, our research group investigated the impact of psychotherapy on cognitive function in LLD patients. Our results found that improvement in mood status was associated with improvement in Information Processing (IP) following 12 weeks of treatment. No improvements were observed for measures of verbal learning (VL) and memory (M). However, little research has looked at long term effects of remission of depression on cognitive outcomes. This study was conducted to evaluate the impact of remission status on cognitive impairment 1-year after depression treatment. We hypothesize that LLD individuals who have remitted (REM), will show improved performance on measures of IP and show no improvement on measures of VL and M when compared to non-remitters (N-REM). Methods: Participants included 45 patients from an ongoing study of disability in LLD. Depression Severity was assessed using the Hamilton Depression Rating Scale (HDRS). Participants were divided into two groups, with REMs coded as having a 50% or greater reduction in depression severity at 12 months relative to their baseline HDRS score. Cognitive functioning was assessed using age corrected scaled scores for VL (Logical Memory Learning; LM-L), M (Logical Memory Delayed; LM-D) and IP (Stroop Color Word test, S-CW). Repeated measures mixed factorial analy-

ses of variance (ANOVAs) were conducted between the two time points. Results: The mean age for our sample at baseline was 71.4 years (SD=6.0), the mean years of education was 16.1 (SD=2.7) and 80% of the sample was female. At baseline assessment the mean HDRS score for the sample was 23.1 (SD=5.5) and at 12 months, 15 LLD participants (33%) achieved remission. With respect to cognitive functioning, at 12 months all participants performed significantly higher on IP regardless of remission status, F(1,42)=9.3, p=.004. Additionally, REMs improved on measures of VL, F(1,43)=4.46, p=.04, and M, F(1,43)=4.59, p=.04. Conclusion: In conclusion, our results suggest that at 12 months improvement in IP was not associated with remission status. This suggests that other factors may be important for cognitive performance in IP. We also found that only REMs improved on VL and M, suggesting an interaction between time and remission status on cognitive function. Further research is warranted to better understand the effects of depression severity on cognitive outcomes in LLD.

**NR7-7**

**VALIDATION OF THE PERSONALITY AND LIFE EVENT (PLE) SCALE IN A SPANISH POPULATION**

*Lead Author: Hilario Blasco-Fontecilla, M.D., Ph.D.*
*Co-Author(s): Paula Artieda-Urrutia, M.D., Juan Manuel García-Vega, M.D., Nuria Berenguer-Elias, M.D., Mónica Fernández-Rodriguez, M.D., Isabel González-Villalobos, M.D., Cesar Rodriguez-Lomas, M.D., María Martín-García, M.D., Rocío Blanco-Fernández, M.D., David Delgado-Gómez, Ph.D.*

**SUMMARY:**
Introduction: There is a lack of accurate screening tools for suicide risk in the patients presenting to emergency departments. The Personality and Life Event (PLE) Scale, a set of the 27 most discriminative items from a collection of questionnaires usually employed in the assessment of suicidal behavior, demostrated an elevated accuracy, sensibility, and specificity in classifying suicide attempters in a previous study. Given that the majority of individuals displaying suicidal behaviors do not disclose suicidal ideation when visiting either general practicioners or mental health workers, the PLE is particularly useful, as this scale does not ask directly about suicidal ideation.
Objectives: To validate the self-administered PLE Scale.
Material and methods: In order to examine its psychometric properties, the PLE scale was administered to 84 suicide attempters, 72 psychiatric controls, and 80 medical controls attending the Puerta de Hierro emergency department between June 1st and December 1st, 2013. To examine its reliability, we used: 1) Cronbach's coefficient α to evaluate the internal consistency; 2) test-retest reliability to assess if the scale is stable over time. Interrater reliability is not relevant as the PLE is a self-report. To assess its construct validity, we used Student's t distribution. All analyses were carried out using SPSS v.20 (Macintosh).
Results: Mean (± SD) of the PLE Scale in suicide attempters, psychiatric controls, and medical controls was 74.2 (± 30.6), 56.9 (± 29.2), and 16.8 (± 22.3). Cronbach's alpha was acceptable (0.634) and test re-test correlation was 0.66. Student's t test gave a significant discriminant validity for the scale global score when comparing suicide attempters with either psychiatric controls (t=3.60, df=154, p<0.001) or medical controls (t=13.70, df=162, p<0.001). The most frequent items reported by suicide attempters were item 4 ("I often feel empty inside"; 87%), item 20 ("I act on impulse"; 75%), and item 9 ("I have tamtrums or angry outburst"; 72.6%).
Conclusions: Our findings support the reliability, construct validity, and ussefulness of the PLE to identify suicide attempters. The PLE is a quick, accurate screening questionnaire to assist clinicians in the evaluation of suicide risk. Thus, the PLE might help primary care physicians in deciding which patients are at risk of suicidal behaviro and should be referred to mental health services. Furthermore, the PLE might assist psychiatrists in assessing short-term suicide risk in the emergency departments.

**NR7-8**

**ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS, QUALITY OF LIFE AND FUNCTIONALITY IN PSYCHIATRIC OUTPATIENTS**

*Lead Author: Adriana G. Bueno*
*Co-Author(s): Ana C. Lucchese, Clarissa S. Rogel, Aline Cacozzi, Luciana M. Sarin, José A. DelPorto, Sérgio B. Andreoli*

**SUMMARY:**
INTRODUCTION: The Affective disorders are very disabling and prevalent psychiatric disorders. In the metropolitan region of São Paulo, an estimated 12-month prevalence of 9.4% for major depression (MD) and 1.5% of Bipolar Disorder I or II (TAB) (Andrade, 2012). Both the DM and the TAB are often under-diagnosed and inadequately treated, resulting in a large number of chronic and refractory patients. According to Quintana et al in a study of 2013, in Rio de Janeiro, only 19% of patients diagnosed with moderate to severe depression received some type of medical treatment. The monitoring and evaluation of these patients use up some methodological tools such as Hamilton Rating Scale for Depression (HAM-D), which provides quantitative scores of depressive symptoms. But the overall improvement of the patient should also be evaluated for aspects of quality of life and disability.
OBJECTIVE: The study of the association between depressive symptoms and dimensions of quality of life (QOL) and functionality in psychiatric outpatients.
METHODS: 41 patients of the Ambulatory of Affective Diseases and Anxiety from UNIFESP with Affective Disorders diagnosed with SCID-CV, were evaluated. Symptoms of depression were rated with the Hamilton Rating Scale (HAM-D), quality of life, using the SF-36 and functionality through the Sheehan Disability Scale (SDS). The SF-36 assesses eight dimensions: physical functioning, role limitations due to physical, bodily pain, general health, vitality, social functioning, emotional and mental health and SDS assesses three areas of functionality: Work / Study, Family and Social / Responsibilities Home. The association between symptoms, QOL and functionality has been made with the Pearson correlation analysis, with 5% significance level.
RESULTS: 82% were female, 56% married, 85% resides in São Paulo, 41% unemployed, 95% have family support, 88% are independent. Unipolar depressive 66% and 34% bipolar, 46.3% have at least one suicide attempt, 100% uses medication, 25% does psychotherapy and 56% have a relative 1o degree with mood disorder. The correlations between depressive symptoms were reversed and significant for 5 of the 8 dimensions of QOL: physical functioning (r = -0,423), general health (r = -0,416), vitality (r = -0,486), role emotional (r = -0,381) and mental health

(r = -0,359). The correlations between symptoms were positive and significant for all dimensions of functionality: work / study (r = 0,369), social functioning (r = 0,511), family / responsibilities (r = 0,363).
CONCLUSION: depressive symptoms affect the functionality of the patient, but do not compromise all dimensions of the quality of life. This discrepancy may be related to the observations reported in the literature, that the decrease in the number of symptoms evaluated by the HAM-D is not absolute to prove the clinical improvement and other aspects are associated to remission. (FAPESP, 2012/23769-5).

**NR7- 9**
**"HEY, BUT THAT TRASH BAG IS REUSABLE!": A CASE REPORT OF A HOARDER'S DILEMMA.**
*Lead Author: Theresa Bui, D.O.*

**SUMMARY:**
With the publication of DSM-5 in 2013, compulsive hoarding and saving has been recognized as its own hoarding disorder instead of being just one of the possible symptoms of obsessive-compulsive disorder or obsessive-compulsive personality disorder. This recognition reflects the constant distress these patients endure when they have to discard possessions and the significant impairment this condition imposes on these individuals. In this case report, we present a 67-year-old male with hoarding disorder, who is undergoing court-mandated assertive community treatment, and his struggle with the process of sorting, organizing, discarding, and preventing clutters in his house.

**NR7-10**
**WHAT IS POSTIVIE WHEN URINE TOXICOLOTY IS NEGATIVE FOR SYNTHETIC CANNABINOIDS?**
*Lead Author: Andrea Bulbena, M.D., M.Sc.*
*Co-Author(s): Norma Ramos Dunn, MD, Ronnie Gorman Swift, MD*

**SUMMARY:**
Background:
Synthetic Cannabinoids (SC) have gained popularity particularly among young substance abusers for their easy availability, low cost and non-detection by routine drug screening. Several reports in adults and adolescents have linked the use of SC to cardiovascular, neurological, and psychiatric effects with negative routine urine toxicologies or positive only for natural THC. SC act as full agonists of the CB1 receptor in the endocannabinoid system, which has been implicated in a number of neuropsychiatric conditions including drug addiction. Evidence suggests that activation of the CB1 receptor by SC may activate the Mesolimbic Reward System provoking the patient to relapse to cocaine and other illicit substance use. The aim of this report is to examine concomitant drug use and to describe the characteristic clinical features in patients intoxicated with SC.
Methods:
During the last year we identified 75 patients intoxicated with SC presenting to our psychiatric emergency room. Usage of SC was based on self-report as our drug screening do not detect SC. Routine urine toxicologies were used to detect other illicit substances including Barbiturates, Benzodiazepines, Cocaine, Opioids, Methadone, THC and PCP.
Results:
Overall, 15% of the 75 patients had negative urine toxicologies. Sixty five percent of the patients who self-reported SC use had positive toxicologies for THC , and 72% for cocaine. In addition 10% were positive for PCP. None of the patients had positive toxicologies for barbiturates and less than 5% had positive toxicology for opioids.
Conclusions:
Patients presenting with the characteristic clinical features and positive toxicologies for cocaine and/or THC should be routinely asked about SC use. Since SC have full binding capacity to the CB1 receptor, they have higher and greater likelihood than natural marijuana to provoke relapse in cocaine-seeking behavior. It is interesting to note that research studies have suggested CB1 receptors may be a useful target in the future development of medication to prevent relapse to substance abuse.

**NR7-11**
**PSYCHIATRIC SYMPTOMS OF CHRONIC LEAD POISONING**
*Lead Author: Kristi L. Cassleman, D.O.*
*Co-Author(s): Vincent, F, Capaldi, M.D.*

**SUMMARY:**
Background: Chronic lead toxicity in adults is a rare condition that may be associated with significant psychiatric sequelae. Extant literature offers conflicting data on the correlation between psychiatric symptoms and the burden of lead toxicity. The diagnosis of chronic lead toxicity contributing to mood related symptoms requires a high index of suspicion and additional specific laboratory testing.
Method: The case of a 42 year-old man with a history of anxiety symptoms and paroxysmal hypertensive episodes associated with chronic lead exposure is presented. Initial work-up, differential diagnoses, treatments, and outcomes for mood disorders associated with lead toxicity are discussed. A literature review of the psychiatric complications and long term sequelae of lead toxicity in adults is presented in a tabular format.
Discussion: While the neurologic and gastrointestinal symptoms of lead toxicity are well described, little is known about psychiatric manifestations. To our knowledge, this is the first case of its kind to describe severe anxiety and paroxysmal hypertensive episodes associated with chronic lead exposure. Chronic lead exposure may contribute to increased irritability, fatigue, and anxiety, resulting in psychiatric referral. This presentation highlights the need for an increased index of suspicion of lead poisoning in adult psychiatric care.

**NR7-12**
**RISK PROFILE DEVELOPMENT FOR BORDERLINE PERSONALITY DISORDER IN ADOLESCENCE**
*Lead Author: Shivani F. Chandrakumar, B.Sc.*
*Co-Author(s): Dianne Groll, Ph.D., Sarosh Khalid-Khan, M.D.*

**SUMMARY:**
Background:
Borderline personality disorder (BPD) is a debilitating psychiatric disorder characterized by emotional dysregulation, disinhibition, interpersonal difficulties, and impairments in self functioning. A growing body of evidence suggests that BPD has its roots in childhood and manifests as borderline personality

related characteristics present in children and adolescents. It is expected that the youth who exhibit these characteristics are at increased risk of developing BPD as adults. Thus, detection of adolescents displaying a risk profile for BPD may allow for early intervention. The purpose of this study is to identify antecedent features associated with BPD in adolescent patients attending a hospital-based clinic for self-harm behaviors.
Methods:
In this pilot study, a chart review of all patients referred to the Distress Tolerance Group at Hotel Dieu Hospital in Kingston, Ontario was conducted. Patient demographics, psychological history, personality traits, family/developmental history, and psychiatric co-morbidities were examined. Data was analyzed using SPSS v21. Clinical information was quantified using univariate analyses, and bivariate analysis (Mann-Whitney U) was used to determine associations between predictor variables and BPD.
Results:
A statistically significant association was found between BPD and the number of suicide attempts made by a patient ($p = 0.023$). A paternal anxiety disorder ($p = 0.081$), dependence or fear of abandonment ($p = 0.072$), being bullied during childhood ($p = 0.082$), and a co-morbid axis I diagnosis of substance abuse ($p = 0.081$) trend towards a statistically significant association with BPD.
Conclusions:
Clinicians should consider the emergence of BPD in their evaluation of youth who present with multiple suicide attempts in addition to self-harm, a feature similarly described in adult BPD. A larger study is recommended to increase the chance of detecting statistically significant associations between presenting features and BPD. The ability to identify a subgroup of youth at relatively higher risk for developing BPD will provide an opportunity for early intervention, preventing the development of clinical BPD in adulthood and the lower social functioning associated with this condition.

**NR7-13**

**TOWARD CULTURALLY APPROPRIATE SUICIDE-PREVENTION LAWS IN EAST ASIA: A SOCIOCULTURAL, HISTORICAL, AND LEGAL PERSPECTIVE**

*Lead Author: Justin Chen, M.D.*
*Co-Author(s): Kevin Chien-Chang Wu, M.D., LL.B., LL.M., Ph.D.*

**SUMMARY:**

Rising suicide rates have led to the recent drafting of suicide prevention laws in several East Asian countries. Yet the appropriate role of law in reducing suicides is unclear. Exploring the historical, sociocultural, and legal precedents regarding suicides in the East versus the West may help shape public policies aimed at reducing suicide rates. This project attempts to compare and contrast the historical evolution of societal, religious, and legal responses to suicide in East Asia versus the West. A history of suicide in East Asia and the West is reviewed, with a specific emphasis on the use of law. The role of stigmatization and criminalization in suicide prevention in each of these cultures is discussed. Finally, a culturally appropriate suicide prevention law for East Asian countries is proposed. In contrast with the West, suicide in Confucian-based society was never absolutely condemned, but instead continued to retain a socially accepted role in certain circumstances. Recent studies suggest that the factors contributing to suicide in East Asian countries appear to differ from those in the West. Culturally appropriate suicide prevention laws in East Asia should focus on erecting physical and psychological barriers to suicide while also increasing alternatives for people in extreme distress. By appealing to hope and family ties rather than shame and stigmatization, suicide prevention laws can be successful in reducing suicidality.

**NR7-14**

**THE CRISIS INTERVENTION TEAM MODEL OF COLLABORATION BETWEEN LAW ENFORCEMENT AND MENTAL HEALTH: PERCEPTIONS OF POLICE CHIEFS, SHERIFFS, AND OFFICERS**

*Lead Author: Anthony Crisafio, B.A.*
*Co-Author(s): Beth Broussard, MPH, CHES, Michael T. Compton, MD, MPH, Thomas Reed, BA*

**SUMMARY:**

Crisis Intervention Team (CIT) is a widely implemented, police-based program designed to improve responses to individuals with mental illnesses and promote partnerships between local law enforcement and mental health agencies. We conducted two surveys pertaining to CIT involving police chiefs/sheriffs and law enforcement officers in Georgia. From the chiefs of police and sheriffs, we gathered extensive information about their perceptions of CIT. With regard to the officers, we again surveyed perceptions, and also hypothesized that compared to non-CIT officers, CIT-trained officers would have: (1) greater job satisfaction, (2) lesser work burnout, (3) a higher likelihood of transporting a man with psychotic agitation depicted in a vignette to mental health services, (4) lower perceptions of dangerousness with regard to that man, (5) lower perceptions of unpredictability, and (6) a lower likelihood of using force. Data were collected from 171 police chiefs/sheriffs (42 with a CIT program in their agency), and 353 law enforcement officers (273 of whom were CIT-trained) using an online REDCap survey. Police chiefs/sheriffs and officers had positive opinions of CIT. Among the six hypotheses tested, CIT-trained officers differed from non-CIT officers only with regard to having a lower likelihood of using force in response to the man with psychotic agitation, when controlling for whether the officer carries an electronic control device (taser). Law enforcement agency leaders and law enforcement officers have positive attitudes about CIT and believe it to be worthwhile in terms of policing, public benefit, and cost-benefit ratio. Whereas some hypothesized outcomes (e.g., job satisfaction and work burnout) were not observed, there is evidence that CIT-trained officers may be less likely to revert to force in a situation involving psychotic agitation. These findings complement other emerging research on CIT as an added benefit for local mental health systems.

**NR7-15**

**FIVE-FACTOR MODEL OF POSTTRAUMATIC STRESS DISORDER IN WORLD TRADE CENTER RESPONDERS**

*Lead Author: Jared Davis, B.A.*
*Co-Author(s): Peter J. Awad, B.A., Leo M. Cancelmo, B.A., Adriana Feder, M.D., Robert H. Pietrzak, Ph.D., Janice Rodriguez, B.A., Clyde B. Schechter, M.D., Steven M. Southwick, M.D.*

**SUMMARY:**

Background

Posttraumatic Stress Disorder (PTSD) is a prevalent and persistent disorder in World Trade Center (WTC) responders. Recent studies have suggested that PTSD is a heterogeneous disorder characterized by different typologies/subtypes of symptomatology. Characterization of predominant PTSD typologies can help inform etiologic models of PTSD, as well as personalized approaches to treatment for disaster responders. In this study, we evaluated predominant typologies of PTSD symptomatology in a large cohort of WTC responders. We then compared these typologies with respect to the phenotypic expression of PTSD using a novel, five-factor dimensional model, and evaluated their demographic, WTC exposure, and psychosocial correlates. This five-factor model has been shown to be superior over other three- (DSM-IV) or four-factor models, providing a significantly better representation of PTSD symptom dimensionality. The five-factor model separates the arousal symptoms into distinct symptom clusters of dysphoric (sleep disturbance, irritability and difficulty concentrating) and anxious (hypervigilance and increased startle) arousal factors.

Methods

Participants were drawn from a cohort of 10,835 WTC workers who presented for an initial monitoring visit at the WTC Health Program (WTC-HP) at Mount Sinai Medical Center and other monitoring centers, an average of 3 years after 9/11/2001. Analyses were restricted to responders with a score ≥ 44 on the PTSD Checklist-Specific Version (PCL-S), indicating probable WTC-related PTSD, and were conducted separately in police (n=344) and non-traditional (n=1,780) responders. Latent class analyses (LCA) of PCL-S responses were used to identify PTSD symptom typologies.

Results

A three-class model was found to optimally characterize typologies of WTC-related PTSD symptomatology in both police and non-traditional WTC workers. Workers in class 1, labeled "High Symptom," had high probabilities of all PTSD symptoms. Workers in class 2 had high probabilities of dysphoric arousal, anxious arousal and numbing symptoms, labeled "Dysphoric," with somewhat lower probability of re-experiencing symptoms. Workers in class 3, labeled "Anxious-Re-experiencing," showed high probabilities of re-experiencing, avoidance, and dysphoric and anxious arousal, with low probabilities of numbing symptoms. Results of multinomial logistic regression analyses identifying predictors of class membership including demographic characteristics, WTC exposure types/severity, and WTC-related medical conditions, will be presented.

Conclusion

The current findings suggest that WTC responders with probable PTSD can be classified into three groups on the basis of PTSD symptomatology. These results can help advance research efforts on the complex mechanisms underlying PTSD symptomatology and inform treatment-matching efforts for disaster workers with this disorder.

**NR7- 16**

**A RANDOMIZED CONTROLLED PILOT STUDY ON MINDFULNESS-BASED COGNITIVE THERAPY FOR UNIPOLAR DEPRESSION IN PATIENTS WITH CHRONIC PAIN**

*Lead Author: Marasha-Fiona de Jong, M.D.*
*Co-Author(s): Jonathan Alpert, M.D., Ph. D., Heidi Ashih, M.D., Ph.D., Willoughby Britton, Ph.D., Jim Doorley, B.A., Maurizio Fava, M.D., Tim Gard, M.Sc., Elizabeth Hoge, M.D., Karsten Kueppenbender, M.D., Ron Kulich, Ph.D., Sara Lazar, Ph. D.,David Mischoulon, M.D., Ph.D., Frenk Peeters, M.D., Ph.D., Laurie Rhoades, LICSW, Rosemary Walker, B.A.*

**SUMMARY:**

Background

Chronic Pain (CP) is a highly prevalent, difficult to treat condition that poses a significant burden on patients, their significant others, and society. CP is often comorbid with psychiatric disorders, depression being the most common (30-50%). Depression worsens the outcome of CP, leading to greater disability, poorer prognosis and greater risk of completed suicide. This makes the treatment of depression in patients suffering from CP very important. There is a need for more research on effective interventions for mood management in patients with CP. Integration of mindfulness and cognitive behavioral therapy might create a synergistic effect in treating comorbid depression in patients with CP. This randomized controlled pilot study compares Mindfulness Based Cognitive Therapy (MBCT), a novel form of treatment combining mindfulness and cognitive behavioral therapy (CBT), in addition to treatment as usual (TAU) versus TAU alone. It will test the feasibility and efficacy of MBCT for the treatment of depression in patients with chronic pain and comorbid depression.

Methods: Subjects who had chronic pain that had persisted for at least 3 months and had a current history of Major Depressive Disorder (MDD), Dysthymic Disorder, or Depressive disorder NOS, and a Quick Inventory of Depression scale (QIDS-C) score of 10 or greater were recruited. In total 25 patients were assigned to the TAU+MBCT group and 14 patients were assigned to the TAU group. Of the patients in the MBCT group we only analyzed those that completed the "minimum dose" of 4 MBCT sessions (out of a maximum course of 8 weekly sessions). The MBCT intervention was based on the Mindfulness Based Cognitive Therapy Program for depression relapse prevention as developed by Segal et al. and adapted to a chronic pain population by tuning the psychoeducation and CBT elements to a currently depressed chronic pain population. The change in the Quick Inventory of Depressive Symptoms (QIDS-C) was the primary outcome measure.

Results: Of the 25 patients assigned to the TAU+MBCT group 19 patients completed the MBCT program (retention rate 76%). No significant adverse events were reported in either treatment group. Repeated measures ANOVAs revealed a significant group × time interaction ($F(1, 31)=4.67$, $p=0.039$, $\eta 2=0.131$) for the QIDS-C that was driven by a significant decrease in the MBCT group ($t(18)=5.515$, $p<0.001$), but not in the control group ($t(13)=2.011$, $p=0.066$). The groups did not significantly differ in QIDS-C scores at baseline ($t(31)=0.71$, $p=0.48$).

Conclusions: We have produced encouraging preliminary evidence that suggests that MBCT is a feasible and effective intervention for the treatment of depression in individuals with CP. Future randomized controlled trials comparing MBCT to attention control, and future comparative effectiveness studies of MBCT and CBT in this population are warranted.

**NR7- 17**

**DOES ALCOHOLISM INFLUENCE THE RECOGNITION OF BASIC FACIAL EXPRESSIONS?**

*Lead Author: Mariana F. Donadon*
*Co-Author(s): Flávia de Lima Osório, Ph.D*

**SUMMARY:**
Chronic alcoholism can cause a wide variety of cognitive, psychomotor and visual-spatial deficits. However, it is not known whether this condition would be associated with impairments in the recognition of affective information that could increase deficits in social cognition and, consequently, the adaptation and interaction with the social environment. Our objective was to evaluate the accuracy and latency in the recognition of facial expressions in active alcoholics. A sample of 105 male subjects with a current diagnosis of alcohol abuse and/or dependence was compared to 105 healthy control subjects from the general population matched for age and education. To evaluate the recognition of emotions, we used a computerized facial expression recognition task involving six basic emotions (happiness, sadness, fear, disgust, anger, surprise), which was applied individually. Data were analyzed using Student's t test to compare means and standard deviations. In relation to latency, alcoholics needed a longer time for the trial of all emotions, namely: happiness (t= -2.403, p= 0.017), sadness (t= -3.394, p =0.001), fear (t= -3.900, p= 0.001), disgust (t= -3.033, p= 0.003), anger (t= -4.203, p= 0.001), and surprise (t= -4.021, p= 0.001). However, regarding accuracy, no statistical difference between groups was found, with only a trend to lower accuracy for the recognition of happiness (t= -1.881, p = 0.061) and greater accuracy for the recognition of sadness (t= -1.926, p= 0.055). These results suggest that alcoholics have impairments in their ability to recognize emotions, needing more time to recognize them, which was not associated with increased accuracy. This may be related to the neurotoxic effects of alcohol, which may include volume loss in areas that mediate emotional processing. Thus, these individuals might be more vulnerable to react inappropriately in social situations, experiencing difficulties in interpersonal relationships, social isolation and even involvement in situations of violence, which in turn may affect quality of life and contribute to the continuity of alcohol use.

**NR7-18**
**FAMILIAL SUICIDE AND PSYCHOPATHOLOGY CONTRIBUTE TO ADOLESCENT SUICIDE: A SYSTEMATIC REVIEW OF RISK FACTORS**
*Lead Author: Vijayabharathi Ekambaram, M.D., M.P.H.*
*Co-Author(s): Phebe Tucker, M.D.,Theresa Garton, M.D., Larry Gonzalez, Ph.D.,*

**SUMMARY:**
Objective: To conduct a systematic review of the literature identifying risk factors for suicide, to determine the association between adolescent suicide and two specific risk factors, familial suicide and familial psychopathology.
Method: Studies were selected using electronic databases and reference lists. 36 studies met eligibility criteria. Eligible studies were categorized into two groups: Group 1, studies focusing on familial suicide, and Group 2, studies focusing on familial psychopathology. Meta-analysis was performed to identify risk factors and to determine their association with adolescent suicide. Fixed and random effect models were used. Heterogeneity was assessed using Cochran's Q test.
Results: For all types of adolescent suicidal behavior, the strongest association was found with familial suicide (OR: 3.14; 2.15-4.60), compared to familial psychopathology (OR: 2.19; 1.68-2.86). Among the risk factors of familial suicide, the strongest association was found between a family member's suicidal death and adolescent suicide (OR: 3.77; 1.40-10.15), followed by a family member's suicide attempt (OR: 3.05; 1.68-5.54), and a family member's suicidal ideation (OR: 1.91; 1.47-2.47). With a history of a family member's suicide, a strongest association was found with maternal suicide (OR: 2.54; 1.84-3.52). Within the group having a history of a family member's psychopathology, the strongest independent risk factors were paternal psychiatric disorders (OR: 2.60; 2.06-3.26) and maternal psychiatric disorders (OR: 2.42; 1.06-5.54).
Conclusions: Results show that familial suicide and familial psychopathology are significantly associated with adolescent suicide, suggesting that clinicians should screen for suicidality in adolescents having these family issues. Large prospective studies are needed to confirm these findings.

**NR7-19**
**A CASE OF FIRST EPISODE OF MANIA IN A FEMALE AT AGE 44 AFTER AUGMENTATION OF SSRI WITH LOW-DOSE ARIPIPRAZOLE**
*Lead Author: Shama Faheem, M.B.B.S., M.D.*
*Co-Author(s): Elif Yilmaz, M.D., Nabila Farooq, M.D., Samreen Shah, M.D.*

**SUMMARY:**
Introduction: Aripiprazole is a novel antipsychotic and a partial dopamine agonist of the second generation class of atypical antipsychotics with additional antidepressant properties, that is primarily used in the treatment of schizophrenia, bipolar disorder, major depressive disorder, and irritability associated with autism.
Clinical Vignette: 45 year old Caucasian female developed her first manic episode after she was prescribed aripiprazole for augmentation of her major depression. The female was admitted to inpatient psychiatric unit for an episode of severe depression and her history of aripiprazole induced mania was obtained retrospectively. Patient was a very reliable historian. Patient reported long standing history of recurrent major depressive episodes without any episode of mania. Patient reported being on escitalopram, which was gradually titrated up to her final dose of 20mg 2 years back. She had good response; however, had an episode of major depression one year back, at age 44, at which time, she was prescribed aripiprazole 5mg for augmentation and escitalopram was continued. Within a week of her initiation, she had elated mood. She reported manic symptoms including high energy, driving constantly, not sleeping and calling her friends in the middle of night, shopping excessively, and talking excessively to the point where it was suggested by her friends to get herself evaluated by her psychiatrist again and talk about her new medication. Patient was seen by her psychiatrist and was told that she had aripiprazole-induced mania and the medication was stopped and her symptoms improved in the next couple of days.
Discussion: A first episode of acute mania at age 44 is highly unusual and the course and timing of the episode suggests that the initiation of aripiprazole may have been the precipitating agent. Review of literature shows previous case reports of mania occurring during treatment with other novel antipsychotics and a few previous case reports of mania occurring secondary to treatment with aripiprazole, though the clinical scenarios

might have been different.
Mechanism of action that have been postulated include theories like the combined antagonism of 5-HT1A and partial agonism of D2 receptors could cause frontal dopamine release, contributing to manic symptoms, or that aripiprazole's 5-HT2A receptor antagonism and its resultant disinhibition of the dopaminergic system could have been a contributor to a relative increase in D2 activation and therefore a contributor to mania or, if a high dose of SSRI simultaneously, which could also have been a factor as in our case, considering aripiprazole's 5-HT2A antagonism and its potentiation of SSRI serotonergic activity. Aripiprazole is a medicine with antimanic properties with efficacy to treat bipolar manic and mixed state and thus, the case was significantly noticeable because of paradoxical precipitation of a manic episode.

**NR7-20**

**SAME PSYCHIATRIC DIAGNOSIS BUT DIFFERENT RISK OF PSYCHOSIS: A DIMENSIONAL APPROACH TO PSYCHOTIC RISK IN A YOUNG PSYCHIATRIC POPULATION**

*Lead Author: Marta Francesconi, Ph.D.*
*Co-Author(s): Minichino Amedeo, M.D., Frascarelli F. Maria, Psy.D., Giallonardo Antonella, Psy.D., Parisi Maurizio, Rullo Santo, M.D., Bernabei Laura, Ph.D., Bersani F. Saverio, M.D., Bevilacqua Arturo, Ph.D., Vitali Sara, Psy.D., Delle Chiaie Roberto, M.D., Biondi Massimo, M.D.*

**SUMMARY:**
INTRODUCTION
Patients with psychotic disorders during the prodromal phase often complain for psychiatric symptoms which may resemble those of other clinical pictures. Anxiety, mood and personality disorders are the most commonly misdiagnosed conditions during this premorbid phase. In this study, through an accurate psychiatric assessment, we aimed at identifying among patients with similar diagnoses and main psychopathological features, a subgroup of those with a significant risk of developing psychosis.
METHODS
We selected 40 young patients (age 14-32) with a diagnosis of unipolar depression (major depressive disorder and dysthimia, n=16, 40%), anxiety (n=11, 27.5%) or personality disorders (n=13, 32.5%) that also met Ultra High Risk (UHR) criteria according to the Comprehensive Assessment of At Risk Mental States (CAARMS). The diagnosis was made according to Diagnostic and Statistical Manual of mental disorders-4th edition, text revision (DSM-IV-TR) criteria. We matched this group with another group of patients with the same diagnosis, similar sociodemographical data and psychopathological conditions ( Brief Psychiatric Rating Scale: BPRS), but who did not meet CAARMS criteria (n-UHR group). Cognitive functioning was assessed through the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and neurological soft signs (NSS) were assessed through the Neurological Evaluation Scale (NES). Recognition of complex social emotions and mental states were assessed using the 'Theory of mind assessment scale" (Th.o.m.a.s.). Exclusion criteria were: current or previous usage of a cumulative dose of antipsychotic medications of (in total) > 15 mg haloperidol equivalent (e.g. maxiumum of 5 days of 3 mg); severe learning impairment; problems arising from an organic conditions; insufficient competence with Italian language; history of psychosis; a documented hystory of intellectual disability (i.e., IQ less than 70).
RESULTS
The general psychopathological conditions of the two groups evaluated through BPRS were not significantly different. Discrepancies between UHR and n-UHR group regarding domains of cognitive functioning (RBANS), in particular attention ($p<0.01$), immediate memory ($p<0.05$) and delayed memory ($p<0.05$) were observed; NES coordination domain was also impaired ($p<0.01$). An impairment of third-person ($p<0.05$) and second-order Theory of Mind (ToM; $p<0.05$) in UHR group was found.
DISCUSSION
The present results suggest that ToM, cognition deficits and NSS alterations may vary within young patients with same psychiatric diagnosis but with a different risk of psychosis. These clinical and neuropsychological variables could be useful to detect those patients who present a specific proneness to develop a psychosis, despite their previous diagnosis. The identification of these of patients could reduce the duration of untreated psychosis.

**NR7-21**

**MODE OF DELIVERY: EFFECTS ON MATERNAL AND NEONATAL ATTACHMENT BEHAVIOR IN THE SECOND DAY OF LIFE**

*Lead Author: Lourdes R. Garcia Murillo, M.D.*
*Co-Author(s): Valeria Costarelli, M.D., Joana Fernandez, M.S., Ana Malalana-Martinez, M.D., Miguel A. Marin-Gabriel, M.D., Ph.D., Isabel Millan, Ph.D., Ibone Olza-Fernandez, M.D., Ph.D.*

**SUMMARY:**
INTRODUCTION:
Babies born with a number of systems of instinctive behavior. These behaviors, such as the neonatal primitive reflexes, form the pre-attachment system during the first 8 months of life.
OBJECTIVE:
Study how type of delivery can influence in the attachment behavior of the newborn and the mother, during an experimental situation of stress in the second day of life.
METHODS:
127 mothers and their newborns were included: 45 vaginal deliveries after oxytocin administration (VaO), 41 vaginal deliveries without oxytocin (VaWO), and 42 programmed c-section (C-S). In the first 48 hours of life, we put the baby in biological nurturing position. It was filmed for 15 minutes, introducing in the 12 min a brief separation of 5 seconds. These videos were analyzed by a blind observer, who collected the neonatal primitive reflexes. These were: hand to mouth, finger flex/extend, mouth gape, tongue dart, arm cycle, leg cycle, foot/hand flex, head lift, head right, head bob/nod, Babinsky, suck, plantar grasp, swallow, jaw jerk.
RESULTS:
Mean gestational age was 39.2 (SD=1.2) weeks in the VaO group, 39.6 (SD=1.2) weeks in the VaWO and 38.9 (SD=0.9) weeks in the in the C-S ($p=0.007$). In the VaO group 46.7% were girls, 48.8% in the VaWO group and 45.2% in the C-S. Mean weight of the newborns was 3240 (SD=476) grams in the VaO group, 3323 (SD=375) in the VaWO and 3322 (SD=354) in the C-S.
In the analysis of the neonatal primitive reflexes it was found that the mean in the VaWO group was 74.1% (SD=25.4) of

the reflexes; in the VaO group the mean was 58.4% (SD=28.9) and in the C-S group was 63.6 (SD=26.7). Comparing between groups, we found a statistically significant difference between the group of VaWO and the VaO groups, not between the other groups.
CONCLUSIONS:
Newborns who were delivered with oxytocin administration presented less percentage of neonatal primitive reflexes. Further studies of the implications of this finding are required.
REFERENCES:
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**NR7-22**
**CUMULATIVE EFFECTS OF NEUROLOGICAL SOFT SIGNS AND CINGULATE SULCATION ON COGNITIVE CONTROL IN FIRST EPISODE PSYCHOSIS**
*Lead Author: Olivier Gay*
*Co-Author(s): Arnaud Cachia, Ph.D., Raphaël Gaillard, M.D., Ph.D., Marie-Odile Krebs, M.D., Ph.D., Sabine Mouchet-Mages, M.D., Jean-Pierre Olié, M.D., Ph.D., Catherine Oppenheim, M.D., Ph.D., Marion Plaze, M.D., Ph.D.*

**SUMMARY:**
Background
Schizophrenia is associated with several cognitive impairments including cognitive control (CC), a hallmark symptom of schizophrenia. CC impairments have also been reported during the prodromal and premorbid stages, supporting a neurodevelopmental component for these cognitive impairments. Recent studies suggest that CC impairments in schizophrenia may be associated to deviations in the early stages of brain development. Indeed, neurological soft signs (NSS) and a lack of asymmetry in the sulcal pattern of the anterior cingulate cortex (ACC), clinical and radiological markers of prenatal events, have been independently associated to schizophrenia liability and to impaired CC. In this context, the aim of this study was to test the possible cumulative effects of these two factors related to early brain development on CC in schizophrenia.
Methods
41 first-episode schizophrenia-spectrum patients were recruited and underwent a structural Magnetic Resonance Imaging (MRI). CC efficiency was evaluated from the difference between TMT_A and TMT_B scores (TMT_B - TMT_A). NSS were assessed using the standardized 23-item Krebs' scale. Patients were categorized as NSS+ (high NSS score) and NSS- (non-significant NSS score). A fully automated method was applied to MRI data to segment the cortex and provide three-dimensional, mesh-based reconstruction of cortical folds. The ACC sulcal pattern was then classified using the standard 3-level category: no paracingulate sulcus (PCS), present PCS and prominent PCS, depending on the occurrence and extent of local sulci. Linear models were used to test the main and interactive effects of NSS and ACC sulcal pattern on TMT_B - TMT_A, adding age, educational level and gender as cofounding covariates.
Results
We detected main effects of both NSS (p=0.04) and ACC sulcal pattern asymmetry (p=0.03) on TMT_B-TMT_A. There was no interaction between NSS and ACC sulcal pattern on TMT_B - TMT_A. Analysis of NSS dimensions (motor coordination, motor integration and sensory integration) revealed a main effect of sensory integration subscore on TMT_B - TMT_A. Other main or interactive effects were not significant.
Discussion
Our study provides evidence of a cumulative effect of NSS and ACC sulcal pattern asymmetry on CC efficiency in schizophrenia. Such findings suggest that CC impairments in schizophrenia is the final common pathway of distinct early neurodevelopmental mechanisms. Possible effects of treatment and illness duration were limited because patients were studied during their first-episode.

**NR7-23**
**QUALITY OF LIFE AND SMOKING**
*Lead Author: Matthew Goldenberg, D.O.*
*Co-Author(s): Itai Danovitch, MD, Waguih William IsHak MD, FAPA*

**SUMMARY:**
Background: Tobacco smoking is the leading cause of preventable illness in the United States and around the world. However, much remains unknown about the factors which motivate individuals to smoke. Quality of life has become an important measure of outcomes across all medical specialties, in both research and clinical settings.
Objective: To date, there has not been a critical review of the research relevant to quality of life in smokers. We describe which scales are used to quantify quality of life in smokers, the association between quality of life and smoking initiation and the relationship between smoking, smoking cessation and quality of life.
Methods: We searched Pubmed, Medline, PsycInfo, and Cochrane Database of Systematic Reviews, with inclusion of 2013 using the keywords: quality of life, QOL, health related quality of life, HRQOL, smoking, tobacco, tobacco abuse, nicotine, nicotine addiction, smoking cessation, WHO QOL, SF-36, SCQoL and CCQ. Additionally, reference lists from the identified articles were searched for additional studies. We focused on studies that used QoL measures. Fifty-four relevant studies were included in this review using specific selection criteria.
Results: Low quality of life and depression are associated with higher odds of smoking initiation in adolescence and lower odds of successful smoking cessation. Smoking lowers quality of life and the magnitude of association is dose dependent on the number of cigarettes smoked. Children with parents smoking on a regular basis report lower quality of life. Smoking cessation significantly improves quality of life. These associations have been widely replicated across populations with diverse socioeconomic and cultural groups from around the world.
Conclusions: Increased understanding of the relationship between quality of life and tobacco smoking is important to patients, clinicians and researchers. Quality of life data promotes smokers and practitioners to become more sensitive to the sub-clinical adverse effects of cigarette smoking, thereby improving motivation to quit, cessation rates and treatment outcomes.

**NR7-24**
**CHILDHOOD TRAUMA IN AN INPATIENT SAMPLE: ASSOCIA-**

**TIONS WITH PERSONALITY VERSUS MAJOR MOOD AND PSYCHOTIC DISORDERS**

*Lead Author: Aleksandra Goncharova, M.A.*
*Co-Author(s): June Lee Kwon, B.A., Yana Lopatyuk, Azra Qizilbash, M.S., Thachell Tanis, B.A., Dr. Lisa Cohen, Ph.D.*

**SUMMARY:**
Objective:Numerous studies have examined links between childhood maltreatment and personality disorders. Fewer studies have explored associations between trauma and major mood and psychotic disorders. In this study, our aim was to compare trauma's relationship with personality disorders and the major mood and psychotic disorders, in psychiatric inpatients. The etiological role of environmental factors has long been considered to be stronger for personality disorders; we therefore predicted stronger associations between trauma and presence of these disorders than between trauma and mood and psychotic disorders.
Method:116 adult participants were recruited from an inpatient psychiatry unit in a large urban hospital. Patients were interviewed using the Structured Clinical Interview for DSM-IV Axis I Disorders(SCID-I) and for Personality Disorders (SCID-II). History of trauma was assessed using two retrospective self-report measures. The Childhood Trauma Questionnaire (CTQ) is a 28-item self-report questionnaire, which measures physical, sexual, and emotional abuse, as well as physical and emotional neglect. The Brief Betrayal Trauma Survey (BBTS) is a 12-item self-report questionnaire assessing exposure to low-betrayal, non-interpersonal trauma and high-betrayal, interpersonal trauma. One-way ANOVA's were conducted to compare scores on the CTQ and BBTS across primary mood/psychotic groups, as well as between groups with and without personality disorders. Pairwise comparisons were conducted to examine mean differences among mood/psychotic groups in more detail.
Results: One-way ANOVA analysis comparing CTQ and BBTS subscale means among patients with at least one personality disorder and patients without personality disorder revealed significant differences for most CTQ subscale scores including Emotional Abuse, Sexual Abuse, and Physical Neglect, as well as the BBTS High Betrayal score. Analyses conducted for major mood and psychotic disorders showed no significant differences for any CTQ subscales. However, significant differences were found for both BBTS subscales. For the High Betrayal subscale, pairwise comparisons revealed the following significant differences in mean total scores among primary diagnostic groups as assessed by the SCID-I: Schizophrenia > Bipolar Disorder; Bipolar Disorder>Unipolar Depression. In the case of the Low Betrayal subscales, the following significant differences were found: Bipolar > Schizophrenia and Unipolar Depression; Schizoaffective>Unipolar Depression.
Conclusion:The results of this study indicate stronger associations between trauma and personality disorders than with major mood and psychotic disorders. This suggests a stronger environmental influence in the etiology of personality disorder relative to major mood and psychotic disorders. This study's findings are consistent with recent studies showing higher genetic heritability for the major mood and psychotic disorders than for personality disorders.

**NR7-25**

**MODALITY SATISFACTION IN SERVICE MEMBERS WITH TREATMENT-RESISTANT PTSD AND MTBI UNDERGOING INTERDISCIPLINARY TREATMENT**

*Lead Author: Vanessa R. Green, D.O.*
*Co-Author(s): Joseph Bleiberg, Ph.D., Jesus J. Caban Ph.D., Thomas J. DeGraba, M.D., Geoffrey G. Grammer, M.D., Vanessa R. Green, D.O., Eric P. Kinsman, M.D., Jonathan P. Wolf, M.D.*

**SUMMARY:**
Objectives:
Identify therapeutic modalities preferred by Armed Forces service members in an interdisciplinary intensive outpatient program.
Identify receptivity of Active Duty military members to complementary and alternative medicine practices.
Anticipate future health care options for patients with comorbid mTBI and PTSD based on satisfaction survey results.
Methods:
Patients referred to the National Intrepid Center of Excellence (NICoE) in Bethesda, MD, are Active duty service members with mild to moderate Traumatic Brain Injury (TBI) with comorbid psychological health conditions.
257 patients at the NICoE underwent intensive evaluation and treatment by a multidisciplinary team over a period of 30 days. At the end of the treatment, service members completed a Patient Satisfaction Survey. Results from this survey from the period of September 2011 to September 2013 were collected and analyzed.
Results:
Overall satisfaction with treatment at the NICoE was 99%; however, only 64% of respondents felt that the treatment plan could be continued at their home command (n=261).
The treatment modalities that service members would most like to continue included acupuncture, physical therapy, physical exercise, mind/body skills, and individual counseling (n=257).
Conclusions:
To the best of our knowledge, this is the first study of its kind that shows military patients endorsing interest in continuing complementary alternative medicine interventions. As the wounded from the wars in Iraq and Afghanistan return and transition from acute to long-term treatment, communities across the nation will be tasked with caring for both the physical and psychological injuries of these soldiers. The results of this study may have policy implications for selecting which modalities may increase active patient participation in treatment.

**NR7- 26**

**PERCEPTION OF EMOTIONAL PROSODY IN ADULTS WITH ADHD**

*Lead Author: Nika Guberina*
*Co-Author(s): Jennifer Uekermann, Dr. rer. nat., Ph.D., Mona Abdel-Hamid, Dr. rer. nat., Markus Krämer, Dr. med., Ph.D., Franziska Niklewski, Isabel Dziobek, Dr. rer. nat., Jens Wiltfang, Dr. med., Professor, Bernhard Kis, Dr. med.*

**SUMMARY:**
Purpose
The coexistence of Attention-deficit hyperactivity disorder (ADHD) and tendency to social conflicts is a well known issue. The purpose of this neuropsychological, experimental study was to explore how far problems in social interaction of adults

with ADHD are attributed to deficits in social cognition.
METHODS:
Established neuropsychological tests for the assessment of important aspects of social cognition like the "Tübinger Affect Battery" (TAB) for testing prosody and the "Cambridge Behaviour Scale" (CBS) for empathy were applied. The performance of adults with the diagnosis ADHD based on DSM-IV-R was compared with a control group. 29 control participants were strictly aligned with 28 patients regarding important neuropsychological and demographic variables.
RESULTS:
Compared to the control group, adults with ADHD showed significant deficits in the perception of emotional prosody ($p = 0,02$) and in the ability to empathize ($p < 0,02$). Especially the differentiation of emotional prosody for angry and annoyed feelings is compromised ($p = 0,04$). When matching affective prosody to facial expression, patients and control participants showed no impairments ($p > 0,2$).
CONCLUSIONS:
ADHD is clearly associated with social cognition impairments, involving emotional prosody perception and reduced empathy. The recognition of important social key information like emotional faces, may help patients to overcome these deficiencies. Thus, the knowledge of the deficits in social cognition may contribute to a better understanding of the development of social conflicts in adults with ADHD.

**NR7-27**

**IDENTIFICATION OF PSYCHOTROPIC MEDICATIONS USED TO MANAGE BEHAVIORAL PROBLEMS IN PATIENTS WITH DEMENTIA ADMITTED TO MIHS FROM 10/12 TO 9/13**

*Lead Author: Maryam Hazeghazam, M.D., Ph.D.*
*Co-Author(s): Claire Sollars, M.D., Celsius-Kit Gesmundo, M.D., Gilbert M. Ramos, M.A., and William S. James, M.D.*

**SUMMARY:**
Introduction: Millions of Americans suffer from symptoms of dementia, with Alzheimer's disease (AD) as a leading cause. Although cholinesterase inhibitors and NMDA receptor antagonists are sources of FDA approved medications to manage cognitive impairments in AD patients, there is no single drug class used for managing behavioral and psychological symptoms of dementia (BPSD). The aim of this study is to identify prevailing pharmacological approaches to BPSD at a major hospital serving the greater Phoenix metropolitan region. A secondary goals is to identify common behavioral symptoms including; agitation, depression, psychosis and aggresion. The findings of this investigation will help identify pharmacological drugs used by local physicians for the management of BPSD, and assess the magnitude of dementia related concerns in the general hospital population.
Method: Researchers conducted chart review of inpatients with a dementia-related diagnosis in their hospital EMR's Problem List field from Oct. 2012 to Sep. 2013. Data gathered included demographic and clinical variables, including admission department (medical or psychiatric service), psychiatry/neurology consults, behavioral problems (agitation, aggression, depression, psychosis, and confusion), and psychotropic medications (antipsychotics, antidepressant, mood stabilizers, and benzodiazepines).
Results: A total of 41 patient charts (26 male, 15 female) were reviewed (26 medical, 14 psychiatric, 1 ED). Average age was 65 (32-89). Twenty-five patients with behavioral problems (61%) were identified; 10 (24%) on medical units (24%), and 15 (37%) psychiatric. Eight patients were treated with antipsychotics (20%) in medicine and 10 (24%) in psychiatry. Medical units used mood stabilizers and antidepressants in 1 (2%) and 7 (17%) patients respectively, whereas psychiatry used these in 5 (12%) and 6 (15%) patients, respectively. Benzodiazepines were used in 5 (12%), and 2 (5%) of patients in medical and psychiatry.
Discussion: Aggression, agitation and psychosis were among the most reported behavioral problems. Atypical antipsychotics, followed by antidepressants were the most frequently used. Antipsychotic use in medical and psychiatry were similar (20% vs. 24%), as was antidepressant use (17%, and 15%). In medical compared to psychiatric units mood stabilizers were used less frequently (2% vs. 12%), while benzodiazepines were used with a higher frequency (12% vs. 5%). Seclusion and restraint was reported in 4 medical patients (15%) vs. 1 psychiatric patient (7%). The number of medical and psychiatric service patients exhibiting behavioral symptoms of Aggression/Agitation (6 versus 5) and Depression/Anxiety (3 versus 2) were similar. Symptoms of Psychosis (paranoia/delusions/hallucinations) however, were greater in Psychiatric patients (7 versus 2), whereas Confusion was noted more frequently among Medicine patients (5 versus 1).

**NR7- 28**

**TREATMENT OF NEGATIVE SYMPTOMS IN SCHIZOPHRENIA: EFFECTIVENESS OF AGOMELATINE, PAROXETINE AND SERTRALINE ASSOCIATED WITH ANTIPSYCHOTICS: CASE REPORT**

*Lead Author: Luis G. Herbst, M.D.*
*Co-Author(s): Anibal Goldchluk, MD, Gabriela Gonzalez Aleman, Psych, Norberto Saidman, MD*

**SUMMARY:**
Negative symptoms are considered characteristic of schizophrenia. Antipsychotic efficacy in the treatment of negative symptoms in schizophrenia is controversial.Typical antipsychotics may produce secondary negative symptoms and the evidence is inconclusive regarding the effectiveness of second generation antipsychotics on primary negative symptoms. Hypotheses about negative symptoms propose and association with a decrease in prefrontal dopaminergic activity . Agomelatine is an agonist of melatoninergic receptors and antagonist activity 5HT2c and 5HT2b. Antagonism of these receptors increases prefrontal dopaminergic activity. The objective of this case report is to explore the effectiveness of agomelatine in the treatment of negative symptoms in schizophrenia.Method: Five patients treated with antipsychotics and antidepressants were selected. Demographic data and PANSS scale was administered at inclusión and at 12 months. Was compared each score of PANSS scale at 12 months with the initial score (Student´s t test) and each item of the scale using chi- square. Data distribution was tested. Standardized z scores were calculated for each case based on the mean and standard deviation(SD) of the entire population of the sample. All patients gave informed consent.Results:Z scores N = 95; initial PANSS: Positive =13.2 (7.84 ) Negative =26.3(10.7);General=39.13(14.3),PANSSFinal: Positive=15.9(12.2),Negative=23.8(9.56); General=42.1(17.7). Patient 1: risperidone deposit and agomelatine. INITIAL PANSS:

Pos 0.52, neg: 0.34 Gen: 0.07. FINAL PANSS: Pos:0.27, neg: -0.39 gen: -0.90. Patient2: paroxetine, aripiprazole. INITIAL PANSS: Pos-0.79 , neg 0.16, gen: -1.6 . FINAL PANSS: Pos: -0.68, neg 0.18, gen: -0.82. Patient 3: deposit risperidone, zolpidem and agomelatine. INITIAL PANSS: Pos -0.79, neg: -1.80; Gen: 0.55. FINAL PANSS: Pos: -0.68, neg: -1.30; Gen: 0.27.Patient 4: risperidone deposit, Zolpidem, Diazepam and sertraline. INITIAL PANSS: Pos -0.79, neg:-1.15; <gen: 0.13. FINAL PANSS: Pos: -0.68, neg: 0.09, Gen: 1,01.Patient 5: agomelatine and clozapine. INITIAL PANSS: Pos 0.23 Neg 0.06, Gen 0.96. FINAL PANSS : Pos: 0.69, neg: -0.79, gen: 0.22.Discussion, Case 1, there is a slight improvement in the positive scale, negative scale, improvement is almost one SD overall improvement of 0.97. Patient's improvement in the last year is mainly due to the improvement of negative symptoms. Case 2,no difference in the positive and negative scales, an overall improvement, > half a SD was observed. Case 3, there is a worsening of 0.5 in the negative scale and the other two scales remained fairly stable due to the abandonment of agomelatine. Case 4, there is a clear worsening of negative symptoms that accounts for the overall worsening of the patient Case 5, Worsening in the positive and significant improvement in negative symptoms , one SD , justifying the overall improvement.Conclusions:In this case report patients in agomelatine showed improvement in negative symptoms

**NR7-29**

**IMPACT OF SMOKING CESSATION ON ALCOHOL RELAPSE AFTER RESIDENTIAL ALCOHOLISM TREATMENT**

*Lead Author: Mario J. Hitschfeld, M.D.*
*Co-Author(s): Terry D. Schneekloth, M.D., Jon O. Ebbert, M.D., Daniel K. Hall-Flavin, M.D., Victor M. Karpyak, M.D., Ph.D., Jennifer R. Geske, M.S., Mark A. Frye, M.D.*

**SUMMARY:**
Background:
The prevalence of tobacco dependence among alcoholics ranges from 45% to 92%. The majority of studies, while variable in study design and follow-up, suggest that smoking cessation therapy (SCT) does not increase the risk of relapse into drinking among patients who have completed alcohol addiction treatment. Whether smoking cessation promotes sobriety in this same patient population is unclear. In this study we evaluated the impact of smoking cessation during residential treatment for alcohol dependence on post-treatment sobriety. We hypothesized that alcoholics who discontinue smoking with SCT will have longer period of abstinence from alcohol than patients who continue smoking.
Methods:
Patients who were admitted to the Mayo Clinic Intensive Addiction Program between 11/10/2005 and 07/18/2013 were identified in this retrospective study. Data was abstracted from the electronic medical record. Clinical diagnoses were made by addiction psychiatrists utilizing DSM-IV criteria. SCT (nicotine replacement, bupropion, varenicline) patients were compared to active smokers (nicotine dependence without SCT) and non-smokers. Relapse, quantified with the Alcohol Use Disorders Identification Test (AUDIT), was defined as any consumption of alcohol. We used Chi-square for comparison of categorical variables and Wilcoxon rank sum tests for continuous variables. Associations between nicotine status and relapse at 12-month follow-up were examined using Kaplan-Meier plots and Cox proportional hazards models.

Results:
The study included 812 alcohol dependent subjects; 518 (64%) were males, 697 (87%) Caucasians; and mean age was 46.3 ± 13.6 yrs. Of 381 (47%) who had a nicotine dependence, 131 (16%) were on SCT at discharge. Among males, nicotine dependence was associated with younger age (p=0.0003) and higher co-occurrence of drug misuse (p=0.0016). In females, nicotine dependence was associated with higher co-occurrence of depression (p=0.03). Nicotine dependence, overall and divided by sex, was not associated with alcohol relapse at 12-month follow-up. SCT was associated with more male subjects (p=0.0059) and higher co-occurrence with bipolar disorder (p=0.0331). At 12-month follow-up, there were no significant differences in alcohol outcome between non-smokers, active smokers and smokers on SCT at time of treatment discharge. There were no sex differences within this analysis.
Conclusions:
In this large single-site clinical sample of alcoholics in residential treatment, SCT at time of alcohol treatment neither worsened nor improved alcohol outcome. The study is limited by lack of: structured diagnostic interview, random assignment to active smoking vs. SCT status, and measures of motivation to achieve sobriety and smoking cessation. Further work is encouraged to identify clinical correlates associated with abstinence to better individualize addiction treatment interventions.

**NR7-30**

**ASSOCIATION BETWEEN NICOTINE DEPENDENCE, ALCOHOL CRAVING AND HIGH-RISK SITUATIONS TO RELAPSE IN PATIENTS WITH ALCOHOL USE DISORDERS**

*Lead Author: Mario J. Hitschfeld, M.D.*
*Co-Author(s): Terry D. Schneekloth, M.D., Jon O. Ebbert, M.D., Daniel K. Hall-Flavin, M.D., Victor M. Karpyak, M.D., Ph.D., Jennifer R. Geske, M.S., Mark A. Frye, M.D.*

**SUMMARY:**
Background:
Our previous work has shown that higher alcohol craving during alcoholism treatment is associated with worse alcohol outcomes after discharge. Despite the high prevalence of nicotine dependence (ND) among alcoholics, smoking status as a risk factor for alcohol related craving is poorly understood. Moreover, it is known that nicotine and alcohol can positively reinforce each other (i.e. crave alcohol when smoking, crave nicotine when drinking). This study aims to evaluate both alcohol craving and high-risk situations to relapse among smoking and non-smoking patients with alcohol dependence both during residential treatment and at 12-month follow-up. Our hypothesis was that smoking alcoholics will have higher scores for craving and that will be associated with relapse.
Methods:
Patients who were admitted to the Mayo Clinic Intensive Addiction Program between 11/10/2005 and 07/18/2013 were identified in this retrospective study. We estimated the frequency of current and former ND in alcohol dependent patients. Clinical diagnoses were made by addiction psychiatrists utilizing DSM-IV criteria. Alcohol craving and high-risk situations to relapse were measured by Penn Alcohol Craving Scale (PACS)

and Inventory of Drug Taking Situation (IDTS) respectively. Chi-square and ANOVA were used to investigate the associations between current or former ND and clinical variables. The associations between ND, alcohol craving and alcohol relapse were examined using Kaplan-Meier plots and Cox proportional hazards models.
Results:
The study included 812 alcohol dependent subjects; 518 (64%) were males, 697 (87%) Caucasians; and mean age was 46.3 ± 13.6 yrs. 381 (47%) and 182 (22%) patients had current and former ND respectively. Current (p=0.03), but not former ND, was associated with a higher PACS score. Both current and former ND were associated with younger age (p=0.0001, p<0.001), and higher positive- (p=0.0039, p<0.0001), negative- (p=0.0001, p=0.0001), and temptation-IDTS scores (p=0.0064, p<0.0001). Among smokers, after controlling for depression comorbidity, antidepressant use was associated with higher PACS (p=0.0038) and negative-IDTS scores (p<0.0001). Current and former ND status was not associated with alcohol relapse at 12-month follow-up. There were no sex differences between smoking status and alcohol relapse. Controlling for covariates, PACS at admission was associated with alcohol relapse at 12-month follow-up (p=0.0003).
Conclusions:
In this large single-site clinical sample, alcoholic patients who smoke report higher craving score and increased risk for relapse in positive-, negative-, and temptation-related drug taking situations. However, nicotine status was not associated with relapse at 12-month follow-up. Further research is encouraged to better understand the impact of higher rates of craving and differential risk of relapse to more effectively design individualized residential treatment programs.

**NR7-31**
**CHILDHOOD COMPARED TO ADOLESCENT ONSET BIPOLAR DISORDER HAS MORE STATISTICALLY SIGNIFICANT CLINICAL CORRELATES**
*Lead Author: Jessica Holtzman*
*Co-Author(s): Shefali Miller, M.D.; Farnaz Hooshmand, M.D.; Po W. Wang, M.D.; Shelley J. Hill, M.S.; Terence A. Ketter, M.D.*

**SUMMARY:**
Aim:
Explore the strengths and limitations related to assessment of the clinical correlates of early compared to adult onset bipolar disorder (BD), when considering childhood and adolescent onset separately versus in aggregate.
Methods:
BD patients referred to Stanford Bipolar Disorder Clinic during 2000-2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation. Patients with childhood and adolescent onset were compared to those with adult onset separately and in aggregate.
Results:
Among 502 BD outpatients (mean±SD age 35.6±13.1 years; 58.3% female; 48.3% Type I, 51.7% Type II; with illness duration 17.6 ±13.1 years; Clinical Global Impression for Bipolar Disorder-Overall Severity score 3.9±1.5, and taking 2.6±1.7 prescription psychotropics), patients with childhood (<13 years, N=110) and adolescent (13-18 years, N=218) compared to adult (>18 years, N=174) onset considered separately both had significantly higher rates for five of eight unfavorable illness characteristics: (1) lifetime comorbid anxiety disorders (80.7% and 67.4% vs. 55.0%, respectively), (2) at least ten lifetime mood episodes (65.7% and 43.6% vs. 22.9%), (3) lifetime alcohol use disorders (48.6% and 41.2% vs. 25.9%),(4) prior suicide attempt (43.1% and 32.4% vs. 20.7%), and (5) lifetime eating disorders (24.8% and 17.8% vs. 7.0%). In addition, childhood but not adolescent onset had significantly higher rates of first-degree family history (69.4% vs. 52.6%, p=0.0067; and 52.4% vs. 52.6%, p=0.84), lifetime substance use disorders (47.7% vs. 35.3%, p=0.046; and 37.7% vs. 35.3%, p=0.67) and rapid cycling in the prior year (33.3% vs. 18.1%, p =0.0058; and 22.2% vs. 18.1%, p=0.31). Patients with childhood/adolescent (pooled) compared to adult onset had significantly higher rates for six of these eight unfavorable illness characteristics, but not for first-degree family history or lifetime substance use disorder. Indeed, patients with childhood compared to adolescent onset had significantly higher rates for four of these eight unfavorable illness characteristics, and tended to have a higher rate of lifetime substance use disorder and prior suicide attempt (but not lifetime history of alcohol use disorder or lifetime history of eating disorder).
Conclusions:
Childhood compared to adolescent onset BD had more statistically significant relationships with unfavorable bipolar disorder disease characteristics, so that pooling these groups attenuated such relationships. Further study is warranted to determine the extent to which the adolescent onset group demonstrates an intermediate phenotype between childhood and adult onset.
Support:
Pearlstein Family Foundation.

**Nr7-32**
**BUPROPION-INDUCED PSYCHOTIC DISORDER: A CASE REPORT AND LITERATURE REVIEW**
*Lead Author: Amer Ibrahim, M.D.*

**SUMMARY:**
Bupropion is an antidepressant that has a unique mechanism of action. It is thought to act primarily through re-uptake inhibition of Norepinephrine and Dopamine (NDRI). It's FDA approved for treatment of Major Depressive Disorder, seasonal affective disorder and smoking cessation.
We report a 53 years old female who was brought to ER by her family for a psychotic episode. Symptoms included visual hallucinations , bizarre behavior and confusion. Onset of these symptoms was 4 days after starting Bupropion for smoking cessation. The Patient had no prior psychiatric history except for Panic disorder that is well controlled with Paroxetine for many years.
Medical work up (including Blood tests and Brain Imaging) did not explain these symptoms. UDS was negative except for Opioid's that the patient takes for chronic knee pain. This rare case presents an interesting discussion given the clear temporal association between psychosis and use of Bupropion.

**NR7-33**
**INTERNET ADDICTION: REVIEW OF NEUROIMAGING STUDIES**
*Lead Author: Sree Latha Krishna Jadapalle, M.D.*

**SUMMARY:**

Background: Internet addiction, more commonly called as problematic internet use or compulsive internet use, was initially proposed as a disorder by Ivan Goldberg, in 1995. The possible future classification of internet addiction as a psychological disorder continues to be a debate, drawing attention from psychiatrists, educators and public. Literature shows lack of standardization of the conceptualization of Internet addiction as a key obstacle to advancing this area of study. Gambling disorder is the only behavioral addiction included in DSM-5. However, internet gaming disorder is listed in an appendix as a disorder requiring further study. Internet addiction, as any other addictive disorder, is characterized by an individual's inability to control his or her use of the Internet, which may eventually result in marked distress and functional impairments of academic performance, social interaction, occupational interest and behavioral problems. Despite increasing prevalence of Internet addiction, the basic epidemiology and the pathophysiology of the disorder remain unclear. To date, very few neuroimaging studies had been performed to investigate the brain structural and functional changes effecting the emotional processing, executive attention, decision making and cognitive control in the Internet addiction group.
Objectives: To do a literature review of peer reviewed journal articles pertaining to the different neuroimaging studies conducted to explore the effects of Internet addiction on the brain structure and function.
Methods: Literature review of 13 peer reviewed journal articles dated from 2009 to 2013 was collected, compiled, and analyzed. The key words used for searching databases for articles pertaining to the topic included, but not limited to "Internet addiction", "Internet dependence" , "Problematic Internet use", and "Imaging studies".
Conclusion: Neuroimaging studies have shown various brain abnormalities in the group with Internet addiction, especially with online gaming addiction. The Brain abnormalities include structural changes along with both grey and white matter changes. Results also illustrated that internet addiction alters the cerebral blood flow distribution in the brain and is associated with reduced orbitofrontal cortical thickness. Studies also suggest that internet addiction is associated with dysfunction in the dopaminergic brain systems, sharing the similar neurobiological mechanism with substance dependence and other addictive behaviors.

**NR7- 34**

**A LONGITUDINAL STUDY OF BDNF PROMOTER METHYLATION AND DEPRESSION IN BREAST CANCER**

*Lead Author: Hee-Ju Kang, M.D.*
*Co-Author(s): Jae-Min Kim, M.D., Ph.D., Seon-Young Kim, M.D., Ph.D., Sung-Wan Kim, M.D., Ph.D., Il-Seon Shin, M.D., Ph.D., Hye-Ran Kim, Ph.D., Min-Ho Park, M.D., Ph.D., Myung-Geun Shin, M.D., Ph.D., Jung-Han Yoon, M.D., Ph.D., Jin-Sang Yoon, M.D., Ph.D.*

**SUMMARY:**

Objective: Brain derived neurotrophic factor (BDNF) have been investigated as a candidate for depression occurring in medical disorders. BDNF secretion is influenced by epigenetic profiles. This study aimed to investigate whether BDNF gene promoter methylation status were associated with depression following breast surgery.
Method: A total of 309 patients with breast cancer were evaluated one week after breast surgery, and 244 (79%) were followed one year later. Depression (major or minor depressive disorder) was diagnosed according to DSM-IV criteria, and classified according to presence at the two examinations. The effects of BDNF methylation status on depression related to breast cancer was investigated at two evaluation point using multivariate logistic regression models. Using the same model, the two way interaction of BDNF methylation status and val-66met polymorphism on depression was also estimated.
Results: Higher BDNF methylation status was independently associated with depression both at 1 week and 1year after breast surgery. No significant methylation-genotype interactions were found.
Conclusions: A role for BDNF in depression related to breast cancer was supported, and associations with BDNF gene methylation status might be a useful tool of identifying of high risk for depression in breast cancer patients and might suggest promising mechanism for drug development.

**NR7- 35**

**INTERACTIONS BETWEEN A SEROTONIN TRANSPORTER GENE, LIFE EVENTS AND SOCIAL SUPPORT ON SUICIDAL IDEATION IN KOREAN ELDERS**

*Lead Author: Hee-Ju Kang, M.D.*
*Co-Author(s): Jae-Min Kim, M.D., Ph.D., Robert Stewart, M.D., MRCpsych., Sung-Wan Kim, M.D., Ph.D., Seon-Young Kim, M.D., Ph.D., Ju-Yeon Lee, M.D., Kyung-Yeol Bae, M.D., Ph.D., Il-Seon Shin, M.D., Ph.D., Jin-Sang Yoon, M.D., Ph.D.*

**SUMMARY:**

Introduction: The functional polymorphism in the serotonin transporter gene linked promoter region (5-HTTLPR) may modify associations between environmental stressors and suicidality in adolescents and working-age adults. We investigated whether the 5-HTTLPR s/l polymorphism interacts with stressful life events (SLEs) and social support deficits (SSDs) on late-life suicidal ideation.
Methods: 732 Korean community residents aged 65+ were evaluated and, of 639 without suicidal ideation, 579 (90.6%) were followed two years later. Prevalence and incidence of suicidal ideation was ascertained. Information on SLEs and SSDs were gathered, and covariates included sociodemographic characteristics, depressive symptoms, cognitive function, and disability.
Results: Significant interactions were observed between 5-HTTLPR genotype, SLEs and SSDs on both prevalence and incidence of suicidal ideation after adjustment for covariates. The associations of SLEs and SSDs with suicidal ideation were strengthened in combination with higher numbers of s alleles, and were only significant predictors in those with s/s genotype. A significant three-way interaction between 5-HTTLPR genotype, SLEs and SSDs was also found.
Limitations: The generalizability of suicidal ideation as a marker of suicidality should be considered.
Conclusions: Gene-environment interactions on suicidal behaviour are therefore identifiable even in old age.

**NR7-37**

**COMPARISON BETWEEN CHILDREN WITH AND WITHOUT AUTISM SPECTRUM DISORDERS WHO PRESENT AT THE COM-**

**PREHENSIVE PSYCHIATRIC EMERGENCY PROGRAM: A PILOT STUDY**

*Lead Author: Ah Young (Nora) Kim, M.D.*
*Co-Author(s): Daniel Antonius, Ph.D., Victoria Brooks, M.D., Michael Cummings, M.D., Howard Soh, MSII, Calvert Warren, M.D.*

**SUMMARY:**
Background: According to data released by the Autism and Developmental Disabilities Monitoring Network, approximately 1 in 88 children are diagnosed with Autism Spectrum Disorders (ASD). Annually, approximately 1 in 30 children will present to emergency rooms in the U.S. for acute psychiatric care. Additionally, children with ASD are significantly more likely to be treated for emotional, developmental, and behavioral problems than other children.
Recent reports have emphasized the need for improved psychiatric crisis care services for children in Western New York. Currently, however, little is known about the prevalence of children with ASD in Western New York psychiatric emergency rooms, the problems they present with, and the treatment and care they receive.
The Comprehensive Psychiatric Emergency Program (CPEP) at Erie County Medical Center (ECMC) is the only 24-hour psychiatric emergency program in Western New York. This program sees annually approximately 2000 children who are in acute crisis.
Giving the increasing need for better understanding the myriad of factors children with ASD may present with when in acute crisis, we proposed to study retrospectively a cohort of children who were admitted to CPEP.
Methods: Our study analysis was based on a subsample (N=2032) of the Electronic Medical Record database of ECMC. Initial assessments of corresponding 2032 visits of 1578 subjects below age 19 who presented to ECMC's CPEP from 9/01/2011 to 9/01/2012 were analyzed.
Descriptive statistics of demographic, and psychosocial factors, as well as presenting symptoms, past clinical history, care and treatment were computed through SPSS Statistics to compare ASD with non-ASD patients who presented to CPEP.
Results: The prevalence of children and adolescents diagnosed with ASD who presented to CPEP was 3.2%, predominately male compared to non-ASD patients ($x^2=35.012$, $p<.0001$), with a mean age of 13.34 (SD=3.36, $t(1576) = -2.775$, $p=.008$). The ASD group showed higher prevalence of aggression ($x^2=24.07$, $p<.0001$), and lower prevalence of substance use ($x^2=6.945$, $p=.008$). Cognitive impairment ($x^2=146.152$, $p<.0001$) was more likely to be comorbid among ASD patients, and no significant discrepancy was found on self-injurious behavior, suicidal ideation, mood symptoms, and psychosis between groups. The ASD group was more likely to have previous admissions ($x^2=21.776$, $p<.0001$), and outpatient treatment history ($x^2=20.562$, $p<.0001$), and less likely to have a history of trauma ($x^2=5.292$, $p=.021$) than the non-ASD. Length of stay difference between the two groups was non-significant, and new outpatient referrals were more likely to be made for non-ASD children ($x^2=14.035$, $p=.0009$).
Discussion: We consider this pilot study is of significant value to characterize the children population admitted to CPEP, particularly those with ASD, to better understand the current use of the CPEP services, and serve as base for improvements in patient care.

**NR7- 38**

**DISTURBANCE OF FACIAL MIMICRY IN SCHIZOPHRENIA**

*Lead Author: Kichang Kim*
*Co-Author(s): Gawon Ju, Jung Woo Son, Sang Ick Lee, Chul Jin Shin, Sie Kyeong Kim, Hei-Rhee Ghim, Jin-Sup Eom, Eunok Moon, Yeong Ok Park, Young-un Cheon*

**SUMMARY:**
Abstract
Objective:
Emotional facial expression is an important mechanism contributing to the experience of empathy, identified as a key predictor of social function. Although the existence of empathy dysfunction in schizophrenia is generally accepted, direct evidence exists very limitedly. The aim of this study was to evaluate the disturbance of empathy through rapid facial mimicry by using electromyography (EMG).
Methods:
Twenty-five patients with schizophrenia were enrolled in the study. They were presented with stimuli portraying happy, angry, sad facial expressions. Participants were requested to recognize the stimuli while electromyographic activities of corrugator, zygomaticus muscles were recorded. The EMG activity and heart rate were compared with those of 24 control subjects matched for age, duration of education, IQ and gender. Empathic abilities of the participants were assessed with the empathy contagion scale (EC) and interpersonal reactivity index (IRI). A neuropsychological battery, including positive and negative syndrome scale (PANSS), the Korean - Weschler adult intelligence scale was also administered.
Results:
There was no significant difference in any of the demographic variables of the two groups. The patients with schizophrenia had a significant deficiency in empathy based on the IRI and the EC. The healthy control group displayed a distinct pattern of EMG responding consistent with a typical mimicry response such as greater zygomaticus activity in response to happy faces, and greater corrugator activity to angry and sad faces. In contrast to controls, schizophrenia patients did not show electromyographic response to happy, angry, sad facial expressions. The activity of zygomaticus muscle was negatively correlated with personal distress in angry face, and positively correlated with personal distress in happy face. A negative correlation was observed between PANSS score and EC, but the rapid mimicry was not related with clinical variables.
Conclusions:
In this study, we could identify that schizophrenia patients are impaired in capacity of facial mimicry, as indicator of affective empathy in both positive and negative emotions. These results suggest that a considerable proportion of decreased facial mimicry in schizophrenia might be influences to social interaction. In managing patients with schizophrenia, evaluation of empathic deficiency and interventions for developing coping strategies should be helpful.
Key words schizophrenia, Empathy, facial mimicry, EMG

**NR7- 39**

**NATIONWIDE PRESCRIPTION PATTERNS FOR PATIENTS WITH SCHIZOPHRENIA IN KOREA FOCUSING ON ANTIPSYCHOTIC POLYPHARMACY**

*Lead Author: Hee-Yun Kim, M.D.*
*Co-Author(s): Chul-Eung Kim, M.D., Ph.D.*

**SUMMARY:**
Objective :
The study aimed to observe the nationwide prescription patterns for patients with schizophrenia focusing on antipsychotic polypharmacy by gathering data from 41 tertiary university hospitals and 8 secondary hospitals in Korea.
Methods :
We retrospectively reviewed and integrated the data of 3 multicenter studies done in Korea wherein antipsychotic medications for patients with schizophrenia were switched to Paliperidone extended-release (Paliperidone ER) from 2008 to 2009 . We sought to identify the rate of antipsychotic polypharmacy, antipsychotic class combinations with special focus on atypical antipsychotics, and the rate of psychotropic polypharmacy using benzodiazepines, mood stabilizers, and other relevant drugs.
Results :
A total of 851 patients were analyzed. Overall, 20.4% (n=173) had received antipsychotic polypharmacy in Korea. Among the 678 patients who were prescribed an antipsychotic monotherapy, only 6.9% (n=47) received one of the typical antipsychotic medications and 93.1% (n=631) received atypical antipsychotics. When examining the antipsychotic class combinations of the 173 patients who had antipsychotic polypharmacy, only 6.4% (n=11) received a combination of the typical antipsychotics (typical + typical antipsychotics). Patients who received atypical + atypical antipsychotics and patients who received typical + atypical antipsychotics accounted for 46.82% (n=81) each. Among the other psychotropic drugs, benzodiazepines (30.3%) showed the highest coprescription rate with the antipsychotics, followed by anticholinergic drugs (28.8%), antidepressants (13.3%), β-blockers (10.1%), and mood stabilizers (8.7%).
Conclusion :
Our results showed that the rate of antipsychotic polypharmacy is relatively low in Korea and Korean clinicians prefer atypical antipsychotics to typical antipsychotics. These findings suggest that there is a distinct nationwide prescription pattern in Korea, especially focused on antipsychotic polypharmacy.

**NR7- 40**
**ASSOCIATION OF BODY MASS INDEX (BMI) AND DEPRESSION SEVERITY IN LATER LIFE DEPRESSION**

*Lead Author: Alana Kivowitz, B.A.*
*Co-Author(s): David Bickford, BA, Ross Crothers, Derek Pisner, BA, Katie Tegenkamp, BS, J. Craig Nelson, MD, & R. Scott Mackin, PhD*

**SUMMARY:**
Background: Up to 15% of adults over the age of 65 suffer from late life depression (LLD) and Major Depressive Disorder is considered a leading cause of lifetime disability worldwide. Previous research has found an association between Major Depressive Disorder (MDD) and obesity but few studies in the extant literature have investigated this association specifically within the geriatric population. This study was conducted to evaluate Body Mass Index (BMI) as a risk factor for heightened depression severity in LLD. We hypothesize that when compared to age and education matched patients, LLD individuals with a high BMI rating will rate higher on scales of depression severity than LLD individuals with a normal BMI rating.
Participants and Methods: Participants included 76 LLD participants in an ongoing study of disability in LLD. Depression was evaluated by licensed psychologists using the Structured Clinical Interview for the Diagnoses of DSM-IV Disorders (SCID) and criteria from the Diagnostic and Statistical Manual, 4th edition (DSM-IV). Depression Severity was assessed the Hamilton Depression Rating Scale (HDRS). BMI was recorded utilizing the Cerebrovascular Disease (CVD) risk factors measure. Participants in the sample were divided into two groups, based on the following BMI thresholds: those having a BMI equal to or above 25 were defined as high and those less than 25 were defined as normal. Analyses of Covariance (ANCOVA) were conducted using SPSS, covarying for age and gender.
Results: The mean age for participants in the Normal BMI group was 72.2 years old (SD=5.2), with 77% females and 23% males. The mean Depression Scores using the HDRS was 18.08 (SD=9.9), and the mean BMI was 22.0 (SD=2.0). The mean age for participants in the Obese BMI group was 71.3 years old (SD=6.5), with 69% females. The mean Depression Scores using the HDRS was 20.38 (SD=10.0), and the mean BMI was 29.6 (SD=4.5). The results demonstrated that obesity is not significantly associated with depression severity as measured by the HDRS $F(3,76)=1.8$, $p=.15$.
Conclusion: Despite leading evidence that would suggest a meaningful relationship between obesity and depressive severity, the present study revealed no such association based on the standard HDRS measure of depression. This finding diverges from the common assumption that being overweight contributes to depression. Although this may be the case for younger populations who are more concerned with factors such as self-image and fitness, our study is important in the sense that it shows that there is a very weak association in the geriatric population. However, due to our limited sample size, further research should be conducted.

**NR7- 41**
**ARE WE MAXIMIZING OR MINIMIZING THE TREATMENT OF ALCOHOLISM IN ACTIVE MILITARY?**

*Lead Author: Felicitas Koster, D.O.*
*Co-Author(s): Gwen Levitt, D.O., James Palmer, D.O., Jennifer Weller, Ph.D.*

**SUMMARY:**
Background: Active duty military service members (SMs) have a high rate of alcohol use compared to even those most at risk in the general population. The military is making efforts to address SMs' use of alcohol by making interventions more accessible; however, treatment may not be optimal. There are currently four FDA-approved medications for the treatment of alcohol dependence and maintenance of abstinence, along with clinical practice guidelines for medical professionals. Although medication alone is rarely sufficient for successful treatment of alcoholism, this adjunct intervention may be underutilized in light of the detrimental effects that alcoholism has on health, social interactions, finances, and career. Especially in the military arena, use of these medications has been slow to gain popularity.
Methods: Researchers examined demographic and clinical

variables, including diagnoses and medications, from 121 SMs admitted between 2012 and 2013 to an inpatient psychiatric community hospital specializing in treatment of active military.
Results: In the sample, 45% of SMs carried a diagnosis of an alcohol use disorder. Thirty percent of SMs had co-occurring psychiatric disorders. None of the SMs were prescribed any FDA-approved medication to promote alcohol abstinence, and only two out of 54 were discharged with such prescriptions. Data from the VA from 2000 to 2012 showed that the third leading cause of mental health-related hospital admissions of SMs was alcohol use disorders. Among patients treated by the VA from 2007 to 2009 for alcohol use disorders, only 3% in primary care settings were prescribed medications for alcohol dependence, while 7% were prescribed such treatment, in an addiction specialty clinic. Use of medications varied widely among VA facilities.
Conclusions: Current findings among SMs with an alcohol use disorder treated at a community hospital concurred with the current reported low utilization rates of FDA-approved medications for alcoholism. Given the high percentage of alcohol use disorders among SMs, especially if their problems are serious enough to require psychiatric hospitalization, and the low utilization of available approved medications for this disorder, the question of why they are not used more often is of interest. Treatment centers specializing in addiction generally prescribe such medication at higher rates, but overall prescription rates remain low considering the multitude of clinical guidelines recommending their use. Evidence-based research shows that these medications can facilitate abstinence, especially when combined with other interventions or when other treatment approaches have failed. Given alcoholism's detrimental effects, continued research efforts aimed at identifying barriers associated with the utilization of medications for alcohol use disorders among military personnel might be beneficial to improving response to treatment.

**NR7-42**
**ASSESSMENT OF SLEEP DISTURBANCE IN BIPOLAR OUTPATIENTS**
*Lead Author: Anna Kreiter, B.A.*
*Co-Author(s): Patrick Hou, M.D., Zebulun Kreiter, M.S., Nancy Maruyama, M.D.*

**SUMMARY:**
Introduction: Sleep disturbance is considered a predictor of increased symptoms in bipolar disorder (BD), a risk factor for episodes, and can contribute to episode recurrence. Recent evidence suggests sleep disturbance is associated with poorer emotional regulation and may contribute to increased risk of substance use disorders and suicidal behavior in BD patients. In light of current research linking sleep quality to illness severity in BD, the authors examine the relationship between BD illness history and features of sleep.
Methods: Subjects included 33 outpatients with BD diagnosis. Subjects completed self-report questionnaires on demographics, illness severity, and sleep quality as part of a larger battery of questions on health promotion and health risk behaviors.
Results: Of all subjects, 71.9% reported 5 to >20 depressive episodes, 59.5% with 5 to >20 manic episodes. Sleep data were collected using the Pittsburgh Sleep Quality Index. Average total sleep time per night was 7.12 hours, and 24.2% of subjects demonstrated phase-shifted sleep. Mean sleep efficiency was high.
Conclusions: The absence of reported sleep disturbance in this sample of severely-ill BD patients may represent a shortcoming in the measures used to assess sleep quality. The authors recommend the development of a self-report sleep quality index designed for individuals with mood disorders.
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**NR7- 43**
**ASSESSMENT OF NUTRITION HABITS IN BIPOLAR OUTPATIENTS**
*Lead Author: Anna Kreiter, B.A.*
*Co-Author(s): Patrick Hou, M.D., Zebulun Kreiter, M.S., Nancy Maruyama, M.D.*

**SUMMARY:**
Introduction: Evidence indicates a role for diet quality in bipolar disorder (BD), although the direction of the relationship is undetermined. Obesity is thought to be linked to increased symptom severity and poor psychiatric outcomes, though these findings are not consistent across studies. Medications used to treat BD cause considerable weight gain, and studies have found a strong association of overweight and obesity with BD. Data suggest increased carbohydrate and sweetened fluids intake in BD patients and increased energy intake in bipolar women, compared to controls. The authors predict increased illness severity in BD subjects, defined by a higher number of episodes and a higher number of hospitalizations, will be associated with a worse nutritional profile.
Methods: Subjects included 33 outpatients with BD diagnosis. Subjects completed self-report questionnaires on demographics, illness severity, and nutrition habits. The relationships between illness severity and nutrition habits were evaluated by t-test and correlation analysis.
Results: Daily grams of fiber intake was negatively correlated with lifetime episodes of mania (Pearson product-moment correlation coefficient = -0.29), and positively correlated with lifetime hospitalizations for depression (correlation coefficient = 0.28). Overall, data did not show a significant relationship between diet quality and illness severity.
Conclusions: More research is needed to clarify the relationship between BD and nutrition. Measures of diet quality should be adjusted for use with BD populations.
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**NR7-44**

**FEATURES OF BORDERLINE PERSONALITY DISORDER CRITERIA AND SUICIDALITY**

*Lead Author: Anna Kreiter, B.A.*
*Co-Author(s): Lisa J. Cohen, Ph.D., Yana Lopatyuk, Azra Quizilbash, Thachell Tanis, Zimri S. Yaseen, M.D.*

**SUMMARY:**
Introduction: Suicidal behavior is a central feature of borderline personality disorder (BPD). Estimates of prevalence rates for suicidal gestures range from 3 to 10% among outpatients and up to 75% in inpatient samples. Specific risk factors and variables associated with suicidal behavior in BPD individuals is an understudied area with important clinical implications. The present study examined the relative contribution of each of the 9 diagnostic criteria for BPD to a history of suicide attempt among psychiatric inpatients.
Methods: Subjects included 118 psychiatric inpatients. BPD diagnosis was obtained by Structured Clinical Interview for DSM-IV axis II (SCID-II) and scores for each of 9 individual BPD criteria was recorded. History of suicide attempt was assessed via the Columbia Suicide Severity Rating Scale (C-SSRS). Reason for psychiatric admission, including mania, depression, psychosis, violence, suicide attempt (SA), suicidal ideation (SI), and other, was obtained from the emergency room admission notes. The relationship between scores on individual SCID-II BPD criteria (excluding the self-harm and SA criterion) and history of SA, as measured by the CSSRS, was assessed by stepwise forward conditional logistic regression. Reason for admission and demographic variables were also entered into the model.
Results: Only one criterion contributing to SCID-II BPD diagnosis, impulsivity (Beta= .767, AOR=2.1, p=0.007) independently predicted lifetime history of SA. Hospital admission for SI and female gender were also significant predictors of SA history. No Axis I disorder diagnosis changed likelihood of a history of SA.
Conclusions: BPD patients represent a high-risk population. Impulsivity may be more predictive of suicide risk than other BPD criteria, providing important targets for treatment.
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**NR7- 45**

**PREDICTIN FOLLOW-UP COMPLIANCE AFTER PSYCHIATRIC CRISIS: A PROSPECTIVE COHORT STUDY**

*Lead Author: Jana Lincoln, M.D.*
*Co-Author(s): Hala Kazanchi, MD, Alisha Oelke, MD, Vikram Malhotra, MD, Crystal Larson DO, Alexandra Flynn, MD, PhD, Shean McKnight, MD, Rosalee Zackula, MA; Denise Williams LMSW, MBA; MD; Jennifer Gibson, LMSW; ; Anurag Goel, MD, Shumaila Younas, MD, Raymond Chankalal, MD, Brooke Sadler, DO, Jahanzeb Khurshid, MD*

**SUMMARY:**
INTRODUCTION: Psychiatric patients often fail to follow up with an outpatient provider after crisis. Such non-compliance leads to overuse of psychiatric emergency room services (PES), increases costs and lowers treatment efficacy. The purpose of this research was to identify factors associated with non-compliance immediately following psychiatric crisis. This new knowledge can then be used to implement targeted patient discharges in an effort to improve patient outcomes, reduce PES overuse and possibly prevent repeated patient hospitalizations.
METHODS: Follow-up compliance with outpatient providers was evaluated in a multi-site, prospective cohort study. Differences were measured in patients discharged with prescheduled aftercare appointments versus those without. Patients were recruited following discharge from either the PES or psychiatric inpatient unit (PIU). Standard of care at both facilities included recommendation of follow-up with an outpatient provider within one week of discharge. Recruitment occurred between June 2012 and September 2013. Study eligibility included adults who were cognitively intact, English speaking, and GAF >40. Sample size calculations included 95% power, 40% response rate, and 5% margin of error; results showed 270 participants per group were required. Two local IRB's approved the study. Participants were followed up to 14 days. If contact was not achieved, participant was considered lost to follow-up. Prospective data were recorded in REDCap (a secure, web-based application). The primary outcome measure was compliance to aftercare. Additional data were extracted from electronic medical records, summarized and evaluated. Analyses included Pearson's Chi-square, t-tests and nominal logistic regression. All were conducted in IBM SPSS 20. RESULTS: Participants included 608 adults: 52% (317) had aftercare scheduled, 43% (263) did not and 5% (28) were excluded (re-hospitalized, moved/phone disconnected). Participants tended to be female, unmarried and/or white. Outcomes included Attended (47%), No show (17%), and Lost to follow-up (36%). Univariate results showed significant differences by appointment status, by diagnosis and by prior 6 month psychiatric service utilization. The majority

of those with scheduled aftercare attend their appointments. Attendance was also associated with Bipolar or Depressive disorders. No shows were more often diagnosed with Adjustment disorder, while Lost to follow-up tended to have Bipolar or Adjustment disorders. Multivariable results showed scheduling follow-up appoints prior to discharge was most predictive of attending aftercare. DISCUSSION: Prescheduling patients prior to discharge may improve treatment compliance and prevent overutilization of emergency services, especially for those with adjustment and substance related disorders.

**NR7-46**

**SUICIDAL RISK AMONG WORKERS AFTER OCCUPATIONAL INJURY IN 12-MONTHS FOLLOW-UP STUDY**

*Lead Author: Chunya Kuo, M.D.*
*Co-Author(s): Chen-Long Wu, M.D., Ph.D., Kuan-Han Lin, Ph.D., Yue Leon Guo M.D., Ph.D.*

**SUMMARY:**
Objective: The suicidal risk has been associated with trauma exposure and negative life events in several studies. The labors who exposed to a severe occupational injury or trauma event in work place may have psychological symptoms, suicidal ideation, and impaired life consequences. Few research article discuss the suicidal risk in the group of occupational injury. The present study aimed to investigate the incidence of suicidal ideation and its risk factors after occupational injuries.
Method: We collected the data from the workers who had been hospitalized for three days or longer after their occupational injury and had received inpatient-hospitalization-benefit of occupational accident medical benefits from labor insurance between February 1 and August 31, 2009. We sent the self-reported questionnaires including demographic data, injury condition, and the questions about “Do you have thoughts of ending your life in current one week?” to 4403 workers at 3 months and 12 months respectively after occupational injury.
Result: A total of 2001 and 1233 workers had completed the self-report questionnaires respectively at the 3-months and 12-months follow-up investigations. A total of 2001 workers had completed the self-report questionnaires (response rate 45.5%). This study found that prevalence of reporting suicidal ideation in current one week among the 2001 workers was 167 (8.3%). Significant risk factors for suicidal ideation were marriage status of divorced/separated/widow (OR=2.60), intracranial injury (OR=2.73), loss of consciousness (OR=1.69), serious to critical self rated severity (OR= 2.31), first hospital stay longed than 8 days (OR=1.87), total hospital stay longer than 8 days (OR=1.98), and mild or severe deformity level (OR=1.66 or 2.60). This study found that the incidence of reporting suicidal ideation among workers during 3 to 12 months after the occupational injury was 7.1%. The significant risk factors for suicidal ideation are intracranial injury (RR=1.99, 95% CI=1.07-3.70) and total hospital stay longer than 8 days (RR=1.74, 95% CI=1.03-2.92).
Conclusion: The result showed that three months after occupational injury, a significant proportion (8.3%) of workers suffered from suicidal ideation. Significant predictors of suicidal ideation after occupational injury included broken marriage, intracranial injury, injury severity, and total hospital stay. Identification of high risk subjects for early intervention is warranted. The results showed that in the 12 months follow-up study in the injured workers, intracranial injury and severity of the occupational injury were significantly related to the incidence of suicidal ideation. The intracranial injury might have impact of sequent psychiatric illness and their relationship needs further study. Therefore, the suicidal prevention and mental health evaluation should be essential in the rehabilitation program after their occupational injuries.

**Nr7- 47**

**THE ASSOCIATION OF SUICIDAL RISK AND POST-TRAUMATIC STRESS DISORDER (PTSD) SYMPTOMS IN WORKERS AFTER OCCUPATIONAL INJURY**

*Lead Author: Chunya Kuo, M.D.*
*Co-Author(s): Chen-Long Wu, M.D., Ph.D., Kuan-Han Lin, Ph.D., Yue Leon Guo M.D., Ph.D.*

**SUMMARY:**
Background: There is a strong connection between suicide-related thoughts and behaviors and the experience of trauma and PTSD symptoms. In previous studies, some reveal the significant findings in which three sub-syndromes of PTSD have different level of influence on suicidal risk in soldiers after war. The study aimed to investigate relation between the suicidal risk with PTSD symptoms in occupational injured workers.
Method: In this cross-sectional study, the two-staged survey was conducted. The first stage of investigation involved a self-reported questionnaire including Brief Symptom Rating Scale (BSRS-50) and PTSD Checklist, which was sent to 4403 injured workers at 3 months after injury and received Labor insurance occupational accident payments between February 1 to August 31, 2009. A total of 2001 workers had completed the self-report questionnaire. Those 357(17.8%) whose BSRS score at or higher than 2 standard deviations higher than norm, or those who had any item of PTSD Checklist reported at “severe” level or higher, or had any 2 items of PTSD Checklist reported at “moderate” levels or higher were included for the second stage phone interview using Mini-international Neuropsychiatric Interview (MINI) by the psychiatrists.
Result: This study found that 148 high scores of BSRS or checklist workers who had been interviewed with MINI, their rates of PTSD, Major depressive disorder (MDD), comorbid PTSD with MDD were 14.9 %, 16.9%, 6.9%, respectively. The suicidal risk was significant in MDD (OR = 6.19, p <0.01) and PTSD (OR = 3.00, p <0.01). After multivariate regression model, the suicide risk still remained significant high in PTSD patients(ORs: 7.47, p<0.01). The three main dimensions of PTSD also had high correlation with suicidal risk: re-experience (ORs: 4.40, p< 0.05), avoidance (ORs: 7.00, p< 0.05), hyperaousal (ORs: 4.85, p< 0.05).
Conclusion: The results showed the high correlation between the PTSD symptoms with suicidal risk, especially the dimension of avoidance. Further intervention of suicidal intervention for the group of PTSD symptoms should be warranted.

**NR7- 48**

**THE RELATIONSHIP BETWEEN COMORBID CLUSTER B TRAITS AND SEXUAL FANTASY IN AN INPATIENT SAMPLE WITH MOOD AND PSYCHOTIC DISORDERS**

*Lead Author: June Lee Kwon, B.S.*
*Co-Author(s): Aleksandra Goncharova, M. A., Yana Lopatyuk, Azra Qizilbash M. S., Thachell Tanis B. A., Lisa Cohen, Ph.D.*

**SUMMARY:**
Introduction: Although sexual fantasies are a nearly universal phenomenon and significantly related to physical and mental health, studies focused on sexual fantasies of psychiatric patients are scarce. The present study assessed the relationship between traits of Cluster B personality disorders (PD) and type and intensity/frequency of sexual fantasies in 4 groups of psychiatric inpatients: those with schizophrenia, schizoaffective disorder, bipolar disorder, and unipolar depression.
Methods: Subjects were recruited from an inpatient psychiatry unit of a large urban hospital. Subjects were diagnosed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and for Personality Disorders (SCID-II). Sexual fantasies were evaluated using the Wilson Sexual Fantasy Questionnaire, a 40 item self-report measure that assesses frequency and intensity for exploratory, intimate, sadomasochistic, and impersonal sexual fantasies. Correlations between Cluster B PD traits and scores for each type of sexual fantasies were calculated for the overall sample and then separately for each mood and psychotic disorder.
Results: Among the total sample, no significant correlations were found between any of the Cluster B PD scores and types of sexual fantasies. However, when the relationships between personality pathology and sexual fantasies were analyzed separately for each mood and psychotic disorder, results were statistically significant. Among schizoaffective patients (n=21), histrionic (HPD) traits were positively correlated with exploratory, impersonal and sadomasochistic sexual fantasies (r=.57-.70) as were borderline traits (r=.47-.60) while narcissistic (NPD) traits were marginally related to impersonal sexual fantasies (r=.38). Among bipolar patients (n=39), HPD traits were positively correlated with exploratory fantasies (r=.43) and NPD traits were positively correlated with exploratory, impersonal, and sadomasochistic fantasies (r=.41-.58). Among schizophrenic patients (n=18), there were only nonsignificant negative correlations. Additionally, no significant correlations were found among patients with unipolar depression (n=31).
Discussion: Significant relationships between Cluster B PD traits and various types of sexual fantasies were found among psychiatric inpatients with schizoaffective disorder and bipolar disorder but not those with schizophrenia and unipolar depression. These results suggest that the relationship between comorbid Cluster B PD traits and sexual fantasy may vary across psychiatric patients with different mood and psychotic disorders. As sexual fantasies have important implications for sexual and interpersonal functioning and the risk of sexual violence, these results could inform treatment with patients with severe mood and psychotic disorders.

**NR7- 49**
**OUTCOME OF CARDIAC VALVE REPLACEMENT IN ENDOCARDITIS WITH IV DRUG ABUSE: A CASE REPORT**
*Lead Author: Kiran Majeed, M.D.*
*Co-Author(s): Natalia Ortiz, MD, Amina Hanif, MD, Nora Jones, PhD*

**SUMMARY:**
Introduction: Infective endocarditis (IE), an infection of the endocardium that usually involves the valves, is caused by a wide variety of bacteria and fungi. Previous studies based on local case series estimated its annual incidence in the U.S. at about 4 per 100,000 population1. IE is one of the most severe complications in intravenous drug abusers (IVDA).
Aim: To describe factors to consider while evaluating the candidacy and capacity to make the decision to have a valve replacement in IVDU with IE.
Method: Case presentation Literature Review. A 49 year old Latino man with history and active Opioid (heroin) dependency, IVDU, HCV Cirrhosis and IE that needed aortic valve replacement. Psychiatry was consulted to evaluate his capacity to make that decision. Psychiatry was consulted to evaluate his capacity to make that decision.
Results: Patients with a history of IVDU require reoperation for recurrences at a significantly higher rate than the non-IVDU patients3. Long-term survival was similar (p = 0.78) between the younger IVDU population and the older non-IVDU population3. Similar rates of long-term mortality between IVDU and non-IVDU patients argue that bioprosthetic valves may be appropriate despite the younger age of the IVDU group.
Conclusion: Based on this patient's presentation with multiple co-morbidities, active IVDU, poor psychosocial support, this patient was a poor candidate for valve replacement. We should make every effort to prevent these patients from returning to IVDU. Pre-operation evaluation of active mental health issues and assessment of social support should be considered in the valve replacement surgery in patients with IE and IVDU.

**NR7- 50**
**FLORID MANIA FOLLOWING ONE-TIME USE OF IBOGAINE: CAUSALITY VERSUS COINCIDENCE IN A CASE SERIES**
*Lead Author: Cole J. Marta, M.D.*
*Co-Author(s): Wesley C. Ryan, M.D., Ralph J. Koek, M.D., Alex Kopelowicz, M.D.*

**SUMMARY:**
INTRODUCTION: Ibogaine is a naturally occurring psychoactive substance native to Africa with postulated anti addictive qualities, specifically to opiates. With the recent rise in opiate dependence, and ibogaine's illegality, a growing number of individuals have sought treatment in poorly regulated overseas clinics over the last few years. Here we report a series of three cases of individuals with isolated ibogaine use that resulted in de novo and florid mania, as seen in bipolar I disorder.
CASES: Three separate cases presented with a temporal association between ingestion of ibogaine and subsequent development of florid mania. Each patient either procured ibogaine from reported opiate treatment facilities or from illegal sources. In all three cases, patients were diagnosed with Bipolar I, current episode mania, independently by multiple treating physicians, in multiple different settings
RESULTS: Naranjo adverse drug reaction probability scale is applied to test the hypothesis that the observed adverse reaction, mania, is attributable to the ingestion of ibogaine. The results suggest a probable relationship between the adverse reaction and ibogaine ingestion in these cases.
DISCUSSION: We submit that symptoms of florid mania arose in individuals with no prior manic or psychotic episodes out of character of age of onset of bipolar I disorder. Literature review revealed no prior reports of this adverse effect associated with this treatment. In light of this, ibogaine's growing evidence for efficacy in opiate detoxification as well as its growing popular-

ity, further investigation in more regulated settings should be considered.

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**NR7- 51**

**NOVEL PSYCHOACIVE SUBSTANCES: USE AND KNOWLEDGE AMONG YOUTH IN EUROPE**

*Lead Author: Giovanni Martinotti, M.D., Ph.D.*
*Co-Author(s): Matteo Lupi M.D., Rita Santacroce M.D., Eleonora Chillemi Psy.D., Eduardo Cinosi M.D., Marco Di Nicola M.D. PhD, Luigi Janiri M.D., Massimo Di Giannantonio M.D.*

**SUMMARY:**
Objective: The rapid emergence of New Psychoactive Substances (NPSs), combined with the ability of the Internet to disseminate information quickly, represents a serious issue from both a clinical and a public health point of view. Aim of our research project is to assess the knowledge of NPSs and the extent of their diffusion amongst Italian young people.
Methods: A sample of 3000 subjects has been asked to fill out a survey questioning their knowledge/use of a group of NPSs, including "Spice", Ayahuasca, Kratom, Krokodil, and "Bath Salts". Other items evaluate possible alcoholic abuse, use of other drugs, smoking habit, consumption of energy drinks/caffeinate beverages, time spent over the Internet per day.
Results: A partial knowledge of NPSs has been evidenced. The use of Cannabis in form of "Spices", "Bath Salts" including mephedrone, and Salvia divinorum was found in 1,6%, 2.5%, and 0.8% respectively. Peculiar is the percentage of subjects with binge drinking habits (98%) among alcohol consumers.
Conclusions: the use of NPSs and binge drinking habits among adolescents and young adults are probably underestimated issues. Further research and a constant monitoring are needed in order to determine more effective prevention measures and to improve global health.

**NR7- 52**

**CRAVING TYPOLOGY QUESTIONNAIRE (CTQ): VALIDATION IN NORMAL CONTROLS AND ALCOHOLICS BEFORE AND AFTER TREATMENT WITH ACAMPROSATE**

*Lead Author: Giovanni Martinotti, M.D., Ph.D.*
*Co-Author(s): Marco Di Nicola M.D. PhD, Daniela Tedeschi Psy. D., PhD, Massimo Di Giannantonio M.D., Luigi Janiri M.D.*

**SUMMARY:**
Introduction: craving is commonly thought to play a crucial role both in the transition from controlled drinking to alcohol dependence and in the mechanism underlying relapse. However there is no consensus on its definition, and on its correct assessment. Another significant hindrance is that craving is almost certainly a multi-faceted construct. To this respect a three pathway psychobiological model able to differentiate craving into a reward, relief, and obsessive component has been suggested.
Methods: CTQ was administered to 547 control subjects and to 100 alcohol dependent patients. The dimensional structure of the questionnaire, through the principal component analysis, the reliability and the threshold values were evaluated in both the control and clinical sample before and after treatment with Acamprosate 1998 mg/die.
Results: the results showed and confirmed that the CTQ is composed of three dimensions. Cronbach's alpha coefficients suggest that the questionnaire is reliable. Alcohol-dependent subjects had a significantly higher mean score as compared to the normative sample in both Reward, Relief, Obsessive craving. Younger age correlated with higher scores on Reward craving ($r=0.38$; $p<0.001$) and males reported significantly higher scores than women on Reward craving ($t=4.36$; $p<0.001$). The level of craving was significantly reduced ($p<0.01$) after a 3 months treatment with Acamprosate. The reduction was significantly different ($p<0.05$) between craving types.
Discussion: CTQ showed to be a reliable and valid questionnaire to distinguish a normative sample from pathological individuals. The average scores obtained represent the first normative data available for this questionnaire. Identify a craving type may represent an important predicting or matching variable for anti-craving psychotropics. More research is needed with respect to CTQ's external validity, i.e. correlations with phenotypic, endophenotypic and genetic indicators of relief, reward and obsessive drinking.

**NR7- 53**

**FAMILY ENVIRONMENT PERCEPTION IN SYMPTOMATIC VERSUS ASYMPTOMATIC *PATIENTS DIAGNOSED WITH BIPOLAR DISORDER***

*Lead Author: Deimante McClure, B.A.*
*Co-Author(s): F Hayashi, M.D., M Flannery BA, AMR Lee, M.D., L Cohen, Ph.D., I Galynker, M.D., Ph.D.*

**SUMMARY:**
Introduction: Previous research suggests that the family environment and symptoms of bipolar disorder are closely related. However, perception of the family environment is likely to be affected by the presence of bipolar symptoms, confounding the results. In this study we examine the differences in the perception of family environment by patients and their caregivers depending on whether the patient was experiencing a mood episode.
Methods: Patients diagnosed with Bipolar Disorder by SCID-P were recruited from the Family Center for Bipolar in New York City as part of a larger study of Family-Inclusive Bipolar Treatment. At study intake, family environment was assessed using the Family Adaptability and Cohesion Evaluation Scale (FACES IV). Principal factor analysis was performed on eight FACES IV subscales. Symptomatic patients' responses on two FACES IV factors were compared to asymptomatic patients' responses.

Additionally, symptomatic patient caregivers' responses on two FACES factors were compared to non-symptomatic patients caregivers' responses.
Results: Twenty-one patient, 22 caregivers and 24 healthy controls were recruited. Patients were diagnosed with Bipolar I (50.0%), Bipolar II (40.9%) and Bipolar NOS (9.1%). Caregivers were 47.6% spouse or partner, 23.8% parent, 19% sibling and 9.5% friend. Exploratory factor analysis suggested a two-factor structure for the FACES scale that we term "Family Health" and "Family Control". Symptomatic patients rated their family environment to have higher
Family Health compared to asymptomatic patients ($p = 0.013$). However, the two groups rated Family Control equally. Caregivers of asymptomatic patients rated their Family Health higher than caregivers of symptomatic patients (M=90.14, M=70.33), however the difference was not significant. There was no statistically significant difference between the groups on ratings of Family Control.
Discussion: Our results show that symptomatic patients perceive their families to be healthier compared to their asymptomatic counterparts. This may suggest greater family involvement during an exacerbation of bipolar illness and the importance of continuous family support. However, better family functioning during a crisis period may only be reflected in patient perceptions as their rating is contrary to family members' reports of more family pathology during the same period. Caregivers' reports of lower family functioning may be associated with higher burden experienced during an episode. These results could inform family-involved treatment in bipolar families.
Keywords: bipolar symptoms, family environment, caregiver

**NR7- 54**

**FACTITIOUS DISORDER COMORBIDITY WITH ASPERGER SYNDROME: A BRIEF REPORT AND CRITIQUE**

*Lead Author: Samina Mirza, M.D.*
*Co-Author(s): Mahreen Raza, M.D., Najeeb U Hussain, M.D. Magdalena Spariosu, MD*

**SUMMARY:**

Asperger disorder was first described by Australian physician Hans Asperger (1944) as "autistic psychopathy". It is an uncommon disorder whose exact prevalence is unknown. Munchausen Syndrome is a psychiatric factitious disorder wherein those affected feign disease, illness, or psychological trauma to draw attention, sympathy, or reassurance to themselves.
A number of case reports have been published that describe stereotypic behavior in people with developmental disorders. This is a first case of a kind where we found Factitious Disorder in context of Asperger Disorder. We learn that Factitious disorder needs to be suspected in frequent acute care utilizers with atypical presentations and negative results, and patients may not be able to be diagnosed until after the involvement of the multiple specialties, invasive work ups, and procedures. We present a case report of 16 years old boy with the Asperger Disorder who was evaluated for the seizure disorder before he was diagnosed with Munchausen disorder (Factitious disorder). This case raises the possibility that other co-morbid disorder can go unrecognized in context of developmental disorders which could be an important consideration in certain situations.
CASE PRESENATION: 16 year old white teenager boy with history of Asperger syndrome, pervasive developmental disorder, pseudo seizure, nystagmus, ingestion of pica transferred from the other facility after having seizure like activity. Patient was started on VEEG and Psychiatric C/L services were contacted for Asperger disease and to r/o pseudo seizure, r/o Munchausen syndrome. During stay in the hospital he had an episode of seizure which were characterized by gagging sound and pooling of saliva in mouth which later he swallows without any difficulty. Pt refused to take medication orally and wants to have NG Tube for medications. He also complaining of weakness of lower extremities, bilateral with fecal and urine incontinence and asked for urinary catheter and diapers respectively. Laboratory workup, imaging and results of VEEG were normal. Physical and mental status exam findings were significant for positive nystagmus on eye contact, hooked with NG tube, urinary catheter and wearing diaper. Mood was "ok" with anxious affect, mostly guarded speech was simple and he answered in simple sentences. Neurological exam was negative.
DISCUSSION: From the above case and from the reviewed literature it can be concluded that physicians should thoroughly explore patient's history for secondary gain. Identifying the underlying conflict and applying case appropriate psychotherapy might prevent the future recurrence. After the thorough literature search it was observed that there is no case report and relationship study has been done for the Asperger disorder and factitious disorder.

**NR7- 55**

**HIV TREATMENT AMONG DIVERSE POPULATIONS WITH CO-MORBID HIV AND SEVERE MENTAL ILLNESS**

*Lead Author: Amanda Momenzadeh, B.A.*
*Co-Author(s): Noah Carraher, M.A., James Dilley, M.D., Christina Mangurian, M.D., Martha Shumway, Ph.D.*

**SUMMARY:**

Background: People with SMI (e.g., schizophrenia) have a high prevalence of HIV, ranging from 4 to 23%, compared to 0.43% in the general population. This increased prevalence is attributed to factors of mental illness such as problems with cognition, lack of information about HIV transmission and prevention, and loss of motivation to practice safe sex. In addition, the majority of people with SMI are not being tested for HIV as the screening rate is 17-47% in these patients. No recent studies have examined the quality of HIV care received by people with co-morbid SMI, a highly vulnerable population.
Objectives: To determine the quality of HIV treatment received by inpatients with SMI
Methods:
Study Design: Retrospective cohort study.
Study Subjects: All HIV+ psychiatric inpatients admitted to Inpatient Psychiatry at San Francisco General Hospital (SFGH) between 2006 and 2011.
Procedures: Demographic information, psychiatric diagnoses, hepatitis co-morbidity, medications, and hospitalization history was collected from chart review on all subject. Further information about HIV care was also extracted, specifically CD4 level, viral load, referral to HIV consultation team while inpatient, HIV medications, and whether these subjects saw HIV specialty outpatient providers.
Data analysis: Most of the data presented is descriptive. Given

the increased prevalence of HIV among racial/ethnic minorities, differences in specific variables (e.g., hepatitis comorbidity, psychiatric diagnosis, HIV care) were also examined (chi square analysis for categorical variables and t-tests for continuous variables).
Results: There were 258 people with HIV admitted to SFGH Inpatient Psychiatry between 2006-2011. The mean age was 42 with range of 48. The majority were men (82%), and the population was racially/ethnically diverse (White 50%, Black 33%, Hispanic 12%, Asian 3.5% and Other 1.5%). The majority of subjects had either schizophrenia spectrum disorders (41%) or mood disorders (49%). Over 70% had comorbid substance abuse, and about 1/3 had comorbid alcohol abuse. Almost half (40%) had co-morbid Hepatitis B or C. The majority of patients had an ER visit (61%) or inpatient hospitalization (47%) after the index inpatient psychiatric hospitalization. Seventeen percent of patients were referred to HIV consultants during the hospitalization, and only 36% were discharged on HIV medications. However, 70% had two or move HIV outpatient visits in the past 12 months. Data on CD4 levels, viral load, and drug interactions are pending. Data on racial disparities in care will also be presented.
Conclusion: This is the largest recent cohort examining the quality of care received by psychiatric inpatients with co-morbid HIV. Given the lack of HIV testing among this vulnerable population, it is likely that this cohort may be even larger. We identified a few key quality of HIV care gaps which we can use to improve the care of this highly vulnerable population.

**NR7- 56**

**ARE THERE GENDER DIFFERENCES IN THE USE OF COERCIVE MEASURES IN PATIENTS WITH SCHIZOPHRENIA?**

*Lead Author: Alexander Nawka, M.D.*
*Co-Author(s): Lucie Kališová, M.D., Ph.D., Thomas W. Kallert, M.D., Ph.D., Lucie Nawková, M.D., Ph.D., Jiří Raboch, M.D., Ph.D.*

**SUMMARY:**

Psychiatry has unique status among other medical disciplines where patients` autonomy might be restricted in the best interest of the patient in order to both cure and control the patient. Coercive measures such as seclusion, physical restraint or forced medication are widely used in clinical practice as methods for managing acute, disturbed or violent psychiatric patients. This study was carried out as a part of the EUNOMIA project (European Evaluation of Coercion in Psychiatry and Harmonization of Best Clinical Practice) in which centers from twelve European countries recruited involuntary admitted patients. The research questions of this study were the following: what are the socio-demographic and clinical characteristics of the patients who receive coercive measures; what types of coercive measures are used with involuntarily treated patients; what are the internal and external risk factors for their use; and finally what are the gender differences among involuntary admitted coerced patients with schizophrenia. All together we evaluated a group of 2,030 involuntarily admitted patients, in which 1,462 coercive measures were used with 770 patients (38%). The percentage of patients receiving coercive measures in each country varied between 21% and 59%. These twelve countries varied greatly in the frequency and type of coercive measure used. In eight of the countries, the most frequent measure used was forced medication, and in two of the countries mechanical restraint was the most frequent measure used. Seclusion was rarely administered and was reported in only six countries. The most frequent reason for prescribing coercive measures was patient aggression against others. A diagnosis of schizophrenia and more severe symptoms were associated with a higher probability of receiving coercive measures. Moreover we did not find any statistically significant influences of the technical characteristics of countries such as, number of psychiatric hospital beds per 100.000, number of staff per bed, and average number of beds per room. In regards to the gender differences among schizophrenia patients results point towards a higher threshold for women to be treated with the use of coercive measures. Based on the results we conclude that coercive measures are used in a substantial group of involuntarily admitted patients across Europe. Their use depends on diagnosis and the severity of illness, but was also heavily influenced by the individual country. National and international recommendation on coercive treatment practices should include and further develop targeted treatments with appropriate consideration of the current evidence in inpatient populations that would rationalize the use of coercive measures in psychiatric facilities.

**NR7- 57**

**EXPOSURE THERAPY WITH A NONVERBAL CHILD: A CASE REPORT**

*Lead Author: Neel V. Nene, M.D.*
*Co-Author(s): Lidija Petrovic-Dovat, M.D., Diane Jasmin, D.O., Farhat S. Siddiqui, M.D., Timothy Zeiger, Psy.D.*

**SUMMARY:**

Introduction: The application of cognitive behavior therapy (CBT) to children with intellectual and developmental disabilities is a relatively new and emerging field of study. CHARGE syndrome is an autosomal dominant rare genetic condition and many children display a specific set of challenging behavioral characteristics including anxiety. It can be very challenging to utilize CBT interventions to treat anxiety in a child who is nonverbal, has intellectual disabilities and/or developmental delays. One-session treatment is a unique variant of CBT that combines several behavioral, social, learning, and cognitive techniques into a single, massed session of graduated exposure. Case Report: Here we present the case of a 10-year old girl diagnosed with CHARGE syndrome as well as a myriad of medical issues. She was doing well until she developed an ileus, had prolonged hospitalization and emergency surgery resulting in an ileostomy. Post-operatively, the patient had insomnia and shared a room with many distressed pediatric patients. After a day of hospitalization, she woke up and expressed feeling anxious through sign language; this was complexed with vivid dreams and nightmares about her mother suffering. Due to the traumatic hospitalization, she developed PTSD-like symptoms. Endorsed by her family were anxiety symptoms including flashbacks and re-experiencing symptoms related to her hospitalization. She began to associate the hospital and medical staff with anxious symptoms. CBT intervention at the hospital: A service dog was in the lobby, and greeted the patient and her mother. The patient likes the color blue. We were able to find a blue wagon on the medical floor where she was treated during her hospitalization. She was wheeled in it to a confer-

ence room where she, her mother, a family friend, the pediatric psychologist and the nurses aid whom the patient had contact with during her hospitalization met together. The patient was initially fearful and communicated through sign and her communication device. The patient gradually approached the nurse aid with less fear. She expressed less fear through her communication devise. The patient was pushed in the blue wagon up and down the hallway by the nurse aide. Pictures and videos were made as transitional objects. By the end of the exposure session the patient was able develop a reassociation between the hospital and medical staff. Discussion: Her delays and medical complexity made traditional CBT interventions difficult. Her rapid response to exposure-based therapy and its long standing treatment response is notable. Her treatment gains were maintained for six months. Her symptoms did relapse after six months, but with partial recurrence which may be secondary to stressors in her life. Conclusion: Exposure based CBT interventions should be considered for medically complex, nonverbal and developmentally delayed individuals.

**NR7- 58**

**AN INFLAMMATORY STRESSOR INCREASES THE NEGATIVE ATTENTIONAL BIAS IN REMITTED MAJOR DEPRESSION**

*Lead Author: Peter Niemegeers, M.D.*
*Co-Author(s): Peter De Boer, Ph.D., Glenn JH Dumont, Ph.D., Bernard GC Sabbe, M.D., Ph.D., Luc Van Nueten, M.D., Ph.D.*

**SUMMARY:**
INTRODUCTION
Major depressive disorder (MDD) is associated with an increased attentional bias on negative stimuli. Other evidence links prolonged pro-inflammatory states and psychosocial stress to the pathogenesis of MDD. The typhoid vaccination and the Trier Social Stress Test (TSST) may be valid models for inflammation-induced mood changes and psychosocial stress, respectively.
HYPOTHESIS
Inflammatory and psychosocial stress increases the negative attentional bias, particularly in patients with a history of MDD.
METHODS
The effects of the typhoid vaccination, the TSST, and the combination of both, were evaluated in a single-blind randomized placebo-controlled crossover trial on female patients with recurrent MDD in remission and healthy controls. Eighteen participants were included in each group. Four hours after the intervention, the “Emotional Stroop”, in which the subjects had to name the colors in which either positive, neutral, or negative words were printed, and a “Face Emotion Recognition Task”, in which the subject had to identify the emotion on faces with 6 basic emotions in varying intensity, were performed. Repeated-measures ANOVA was performed testing the effect of treatment as well as the group × treatment interaction.
RESULTS
A significant Group × Treatment interaction ($p = 0.032$) was found for the time to read the colors of negative words after typhoid vaccination without TSST, with the patients but not the controls showing an increase in reading time. After the TSST and placebo, reading time of neutral words was significantly reduced ($p = 0.003$). There were no significant effects on the recognition of separate emotions, but a significant increase ($p = 0.046$) on the total recognition of emotions was seen in the group with placebo and TSST, as well as a significant Group × Treatment interaction ($p = 0.044$) in the group with only the typhoid vaccination, with an increased performance in the controls but not the patients.
CONCLUSION
An inflammatory stressor increases negative bias on the “Emotional Stroop”, but not the “Face Emotion Recognition Task”, and not when it is combined with a psychosocial stressor.
DISCUSSION
These results show that inflammatory stress increases the negative attentional bias in depressed patients. However, this effect is attenuated when the inflammatory stressor is combined with acute psychosocial stress. Performance increased in both groups after the TSST. This suggests that acute psychosocial stress has different cognitive effects than inflammatory stress. However, it should be noted that particularly chronic psychosocial stress, and not acute psychosocial stress, is associated with MDD, which may exert different effects.

**NR7- 59**

**RELATION BETWEEN BDNF SERUM LEVELS AND MATRICS CONSENSUS COGNITIVE BATTERY PERFORMANCE IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Rodrigo Nieto, M.D.*
*Co-Author(s): Hernan Silva, M.D., Manuel Kukuljan, M.D., Ph.D., Cecilia Rojas, Ph.D., Alejandra Armijo, M.D., Ruben Nachar, M.D., Alfonso Gonzalez, M.D., Carmen P. Castaneda, Cristian Montes, Cristian Aguirre M.D., Juan Meneses M.D., Simon Medina, Valeria Salinas*

**SUMMARY:**
Cognitive symptoms are a central manifestation of schizophrenia, and are significantly related to patients´ quality of life and to their ability to be reintegrated to society. Despite the relevance of cognitive symptoms of schizophrenia, the study of the biological basis of this deficit is still insufficient. Several studies have linked BDNF not only to the pathogenesis of schizophrenia, but also to neuronal plasticity, learning, and memory, making it a good candidate for a biomarker of cognition in schizophrenia.

In order to study the relation between BDNF and cognitive functioning in schizophrenia, we evaluated cognitive functioning with the MATRICS Consensus Cognitive Battery (MCCB) and we measured serum BDNF levels with ELISA, in a sample of schizophrenic patients and a control group of healthy subjects matched for age and sex.
Patients were classified into three subgroups according to their global composite score in MCCB. We found significantly lower serum BDNF levels in the subgroup of schizophrenic patients with poorer cognitive performance, compared to control group subjects ($p = 0.02$). No significant differences in serum BDNF levels were found when comparing the total group of schizophrenic patients with the healthy subjects control group ($p = 0.39$). Additionally, we found a statistically significant positive correlation between serum BDNF levels and the Attention / Vigilance cognitive domain of the MCCB ($p = 0.04$).
These results are consistent with the role of BDNF in neurodevelopment, neuroprotection and synaptic plasticity described in the literature. The study of BDNF as a biomarker of cognition in these patients provides information about the molecular basis

underlying the cognitive deficits in this illness, and may have clinical implications in the future.
Project funded by BNI and OAIC.

**NR7- 60**

**PATIENT FACTORS THAT PREDICT NO RESPONSE TO A BRIEF INTERVENTION FOR ALCOHOL-EXPOSED PREGNANCY RISK**

*Lead Author: Abhishek R. Nitturkar, M.B.B.S.*
*Co-Author(s): Karen S. Ingersoll Ph.D.*

**SUMMARY:**

Background: Alcohol–exposed pregnancy (AEP) is a leading cause of preventable birth defects including Fetal Alcohol Spectrum Disorders.Several interventions based on Motivational Interviewing with Feedback are efficacious and reduce the risk of AEP in community and college women. They were not efficacious in some women who remained at risk for AEP. The purpose of the present study was to identify factors that predicted a failure to respond to a single session AEP intervention.
Methods: Women at Risk for AEP (n= 217) were randomized to Motivational Interviewing + Feedback (EARLY), video, or brochure conditions. Interventions resulted in decreases in drinks per drinking day (DDD), ineffective contraception rate, and AEP Risk at 3 and 6 months. Participants in EARLY had significantly larger absolute reductions in ineffective contraception and AEP risk, but not DDD. Using the parent study data, we examined demographic, psychological, and behavioral variables that might relate to no change in risky behaviors. We first analyzed the univariate relationships to AEP risk at 6M, using one-way ANOVAs and Chi-Square tests to identify7 candidate baseline variables: mean standard drinks per week, number of binges, DDD, smoking status, DSM-IV alcohol abuse and dependence measured with the M.I.N.I, and self-efficacy (temptation) to drink. We then used a Stepwise Logistic Regression procedure to identify a multivariate model of AEP risk at 6M.
Results: The analytic sample included 143 women ages 18-44 with a mean age of 29, with 49% African-American, 38% Caucasian, 10% Other, and 3% Asian. All 7 variables were entered into the model, and those retained included average drinks per week (Odds Ratio=1.04; 95% Confidence Interval=1.00-1.07), smoking (reference level no) (Odds Ratio=.59, CI=.29-1.19), Alcohol Abuse (Odds Ratio=1.42, CI=.58-3.49), and Alcohol Dependence (Odds Ratio=2.025; CI=0.89 – 4.63). While all 4 variables remained in the model, only the mean standard drinks per week at baseline was an independent predictor of remaining at AEP risk at 6M after intervention.
Conclusions: A model including mean drinks per week, smoking, alcohol dependence, and alcohol abuse significantly predicted AEP risk at 6M. Women who drink regularly and show signs of alcohol abuse and dependence, and who engage in other risk behaviors may need a more intensive intervention than the single session interventions tested to achieve changes in drinking and/or contraception that reduce risk for an AEP. Women could be screened for these factors and triaged to a more intensive AEP risk reduction intervention, such as CHOICES. However, other factors must relate to treatment non-response; the current model explains 11 % of the variance. Further investigation of factors that lead to maximum treatment response should be identified. The clinical impact would be appropriate treatment-matching and use of limited intervention resources for women at risk for AEP.

**NR7- 61**

**WHICH CHARACTERISTICS OF SUICIDAL IDEATION PREDICT SUICIDE ATTEMPTS IN ADOLESCENTS?**

*Lead Author: Ana Ortin, M.A.*
*Co-Author(s): Regina Miranda, Ph.D., Michelle Scott, Ph.D., David Shaffer, F.R.C.P., F.R.C.Psych.*

**SUMMARY:**

INTRODUCTION
Suicidal ideation (SI) has been consistently associated with suicide attempts (SA). However SI is a complex phenomenon consisting of a range of quantitative and qualitative characteristics, such as frequency or wish to die. Little attention has been paid to disentangle which characteristics of SI may be associated with future SAs among adolescents and an earlier transition to SAs among those without past history of SA. Objective: To examine SI characteristics that predict future SAs in adolescents with and without SA history; and the transition to first time SAs among adolescents without a SA history.
METHOD
Sample: 122 adolescents, ages 12-21 (60% female), who reported recent SI (past 3 months) on the Columbia Suicide Screen and completed the DISC-2.3. at baseline (Shaffer et al., 2004) were followed 4-6 years later to assess future SA. The sample was 54% White, 15% Black, 15% Latino, and 17% of other races/ethnicities. About 19% also reported SA history at baseline.
Baseline: Adolescents completed the Columbia Suicide Screen (CSS), a diagnostic interview (DISC-2.3), the Beck Depression Inventory (BDI), and the Adolescent Suicide Interview for Suicidal Ideation (ASI-SI), which inquired about characteristics of their most recent SI: frequency (more than once a week vs more than once every two weeks), wish to die (Did not want to die/ Uncertain vs. Wanted to die), length of a typical SI episode (less that 1 hour vs. 1 hour or more), timing of most recent ideation episode (more than 2 weeks ago vs. within the past 2 weeks).
Follow-up: Adolescents were asked about whether they had attempted suicide since baseline.
RESULTS
During follow-up, 18 adolescents (15%) made at least one SA (61% though ingestion). There were no significant demographic differences between those who did or did not attempt.
Logistic regression analyses were conducted to assess the association between baseline SI characteristics and risk for a future SA controlling for gender, SA history, and depressive symptoms (partial model), and the other SI characteristics (full model). Length of a typical SI episode of 1 hour or more was associated with future SA in the partial (OR=3.1; p<.05) and full models (OR=3.6; p<.05).
Out of the 18 adolescents, 8 were first time attempters. Those whose baseline SI lasted one hour or more made the transition to a future SA, on average, within less than one year (M=0.5, SD=1.0), compared to individuals with typical SI of less than one hour, whose SA occurred within about 3 years (M=2.8, SD=1.0), t(6)= 3.25; p<.05.
DISCUSSION
Assessment of suicide ideators at greatest risk of engaging in a future SA should include inquiries about their length of a typical ideation episode. Identifying specific characteristics of SI that predict risk of future SA is a critical step in prevention, es-

pecially among adolescents who have not previously attempted suicide.

**NR7- 62**

**UP AT NIGHT: IS SLEEP DISTURBANCE A SYMPTOM OR A SEPARATE DISORDER IN ACTIVE MILITARY SERVICE MEMBERS?**

*Lead Author: James Palmer, D.O.*
*Co-Author(s): Gwen Levitt, D.O., Felcitas Koster, D.O., Jennifer Weller, Ph.D.*

**SUMMARY:**
Background: Studies suggest that military personnel have high rates of insomnia, a known risk factor for the development of posttraumatic stress disorder (PTSD) and other psychiatric conditions. Long, unpredictable work hours along with conditions of combat may promote sleep disturbance. Service members (SMs) with combat-related PTSD often report an unwillingness to fall asleep for fear of nightmares and sleep-related reactions. Physicians often prescribe multiple medications to target sleep difficulties, in addition to medications for the SM's "primary" psychiatric diagnosis, often with limited success in resolving sleep disturbance.
Methods: Investigators collected demographic and clinical variables from medical records of 121 psychiatric inpatients treated in a community hospital unit specializing in SM psychiatric care. Records were reviewed from a 1.5-year period (2012 to 2013). Data from records were compared and contrasted with information available online from the Veteran's Administration (VA).
Results: Ten percent of SMs at the community hospital were admitted with an insomnia diagnosis, and 17% of these patients had a prescription for sleep aid medications. On discharge, 7% of these SMs were diagnosed with a sleep disorder and 33% were discharged with sedatives. Among patients with PTSD, 50% were discharged with sleep aid medication but without an insomnia diagnosis, whereas 8% were discharged with diagnosis and a sedative. Multiple drug trials and combinations of pharmacotherapy were utilized in the hospital; seven (11%) of SMs with a PTSD diagnosis were discharged on two sedatives and one SM was prescribed three sleep aids. Despite the high rate of comorbid alcohol use, zolpidem was the most commonly prescribed medication. Outpatient VA data indicated that 41.7% of veterans met criteria for insomnia, with 24% using prescription sleeping aids or bedtime alcohol. Another VA report on data accumulated since 2001 documented a rate of 54% of military personnel suffering with insomnia. A 2010 survey at Madigan Army Medical Center reported that 85% of soldiers were diagnosed with insomnia (and 50% of those patients had sleep apnea).
Conclusions: The DSM-5 highlights an ongoing need for attention to sleep disturbance and its relations to and interactions with other psychiatric disorders. Data on SMs in this study suggested that sleep disturbances were identified and treated with pharmacotherapy despite a lack of a formal diagnosis of insomnia. Further research is necessary to identify the risk factors for sleep disturbances in SMs and to understand if these problems arise as a consequence of combat experiences, comorbid psychiatric illnesses, coping strategies to avoid nightmares, sleep apnea, and/or other medical conditions. With increased information, more successful treatments can be designed to address this very significant issue among SMs.

**NR7- 63**

**METABOLIC SYNDROME AND ELEVATED C-REACTIVE PROTEIN LEVELS IN ELDERLY PATIENTS WITH NEWLY DIAGNOSED DEPRESSION**

*Lead Author: Soyeon Park, M.D.*
*Co-Author(s): Yeon Ho Joo M.D. Ph.D., Roger S. McIntyre M.D., Byungsu Kim M.D. Ph.D.*

**SUMMARY:**
Objective: Depression and metabolic syndrome (MeS) are prevalent in elderly people and are associated with adverse outcomes, especially cardiovascular disease (CVD). Increased C-reactive protein (CRP) levels are a risk factor for depression and chronic medical disorders, such as CVD and MeS. The aim of this study was to evaluate the association between MeS and CRP levels in elderly (>60 years old) patients with newly diagnosed major depressive disorder.
Methods: We enrolled 30 subjects with newly diagnosed depression and 30 age- and sex-matched controls who presented for a health examination at Asan Medical Center, Seoul, Korea. Sociodemographic, MeS components and CRP were measured before starting treatment with antidepressants.
Results: There were no significant differences in sociodemographic characteristics or lifestyle factors between depressive and healthy control patients. The newly diagnosed depression group showed a significantly increased risk of MeS (OR 4.75, 95% CI 1.58–14.25) compared with the control group. Of the five MeS components examined, only waist circumference was significantly different between the two groups (OR 6.00, 95% CI 1.09-32.98). Elevated CRP levels were significantly associated with an increased risk for depression (OR 3.86, 95% CI 14.89–1.00).
Conclusions: The risk of MeS and elevated CRP levels are higher in depressed elderly patients than in normal subjects. Physicians should be alert to these cardiovascular risk factors when diagnosing and prescribing antidepressants for elderly depression. Clinical investigators are encouraged to assess markers of inflammation and review detailed information on risk factors, such as waist circumference, for MeS in depressed patients.

**NR7- 64**

**THE MENTAL EXPERIENCE OF CATATONIA: A CASE REPORT AND LITERATURE REVIEW**

*Lead Author: Rachit Patel, M.D.*
*Co-Author(s): Andrew Francis, M.D., Ph.D.*

**SUMMARY:**
Objective: To report a case and review the literature on the subjective experience of catatonia. Background: Catatonic patients are often mute, negativistic and withdrawn in the acute state. After recovering speech, they often later report having unpleasant mental experiences, described as "schrecklich" or dreadful with ideas of death. Improved awareness of this phenomenon would aid treatment during the acute state. Design: Case report and literature review. Methods: Systematic MEDLINE search for mental experience of catatonia. For the case, the Northoff et al. questionnaire for subjective experience in catatonia was administered 9 days after resolution of symptoms and treatment was summarized. Results:
A 27-year-old Asian man with a history of depression who developed catatonia over a period of 2 weeks was admitted. He

scored 10/69 on the Bush-Francis Catatonia Scale with positive scores on immobility/stupor, mutism, staring, withdrawal and ambitendency. Routine laboratory studies and toxicology were negative. CT Head showed cortical volume loss and an enlarged right ventricle. The patient was treated sequentially with lorazepam, risperidone and zolpidem and later in combination. Most catatonic symptoms resolved by 48 hours, except mutism, which persisted 22 days. The Northoff et al. questionnaire was administered 9 days after he regained speech. The mental experience of the patient shared similarities with the 24 cases studied by Northoff et al. 3 weeks after catatonia had resolved. His responses were also consistent with unsystematic reports from 4 cases from Kahlbaum in 1874 and 18 cases from Hoch in 1921. The patient's catatonia responded to lorazepam, consistent with Rosebush et al. who linked positive response to benzodiazepines with reports of anxiety/distress during the catatonic episode. Conclusions: Accounts of the mental experience of catatonia are sparse but consistent with psychological models of fear response in catatonia. Our case confirms prior reports and extends these to an earlier post-catatonia interval. The data suggest that systematic studies of the subjective mental experience may help further operationalize the more nuanced catatonic symptoms and assist in humane treatment.

**NR7- 65**

**SLEEP DISTURBANCE AS A RISK FACTOR FOR HEIGHTENED DEPRESSION SEVERITY AND MEMORY DEFICITS IN LATE-LIFE DEPRESSION**

*Lead Author: Derek Pisner, B.A.*
*Co-Author(s): Alana Kivowitz, B.A., David Bickford, B.A., Katie Tegenkamp, B.S., Ross Crothers, B.A., J. Craig Nelson M.D., & R. Scott Mackin PhD*

**SUMMARY:**
Research has established that Late Life Depression (LLD) is associated with cognitive dysfunction and sleep disturbance. The present study evaluates the association of sleep disturbance with depression severity and cognitive functioning in a moderately to severely depressed sample of older adults. Participants included 61 older adults with LLD involved in an ongoing study of disability in LLD. Sleep Disturbance was characterized using three self-reported insomnia questions from the Hamilton Depression Rating Scale (HDRS). Participants were divided into two groups based on these scores: the "Sleep Disturbance" group was defined as scoring a total of "2" on at least two of the three self-reported insomnia questions, whereas the "No Sleep Disturbance" group consisted of all other participants. Depression was evaluated by licensed psychologists using the HDRS which we adjusted to exclude insomnia questions. Memory function was evaluated using the Hopkins Verbal Learning Test (HVLT) and Wechsler Memory Scale (WMS). The demographic characteristics (age, education) were compared for the two groups using analysis of variance (ANOVA). Subsequently, ANCOVAs were conducted to evaluate if the two groups differed with respect to HDRS scores and HVLT & WMS scores. There were no significant or confounding demographic differences between groups. The mean HDRS Score (Adjusted) for the entire sample was 17.3 (SD= 5.0). The mean HDRS, HVLT, and WMS scores for the Sleep Disturbance group were 19.6 (SD=5.7), 7.1 (SD=2.8), 19.5 (SD=9.5), respectively. The mean HDRS, HVLT, and WMS scores for the No Sleep Disturbance group were 10.7 (SD=10.3), 8.5 (SD=1.8), 25.4 (SD=7.7), respectively. The sleep disturbance group demonstrated significantly greater depression severity on the HDRS, $F(2,60)=4.59$, $p=.014$, and significantly poorer performance on the HVLT, $F(4,60)=86.79$, $p<.001$ and WMS Delayed Recall Scores $F(4,61)=3.9$, $p<.01$.
The results demonstrate that self-reported sleep disturbance in LLD is associated with greater depression severity and poorer performance on measures of memory in older adults. This finding is important because it suggests that sleep disturbance, a modifiable factor through CBT-I and sleep medications, may be a valuable route toward managing both depression severity and cognitive function in LLD. Further, since associations were found using self-report measures of sleep disturbance, self-report measures alone may be particularly sensitive to identifying LLD individuals at greater risk for cognitive dysfunction and heightened depression severity. Consequently, the authors interpret this study to imply that general and sleep physicians should expand efforts to use simple self-report measures for screening sleep disturbance as a primary prevention strategy for cognitive dysfunction and heightened depression severity in LLD.

**NR7- 66**

**DIFFERENTIAL PHENOTYPE OF CARDIAC DISEASE AND HYPERTENSION IN BIPOLAR DISORDER**

*Lead Author: Miguel L. Prieto, M.D.*
*Co-Author(s): Susan L. McElroy, M.D., Stacey J. Winham, Ph.D., Mohit Chauhan, M.D., Sharonne N. Hayes, M.D., Alfredo B. Cuellar Barboza, M.D., Manuel E. Fuentes, M.D., William V. Bobo, M.D., M.P.H., Jennifer R. Geske, M.S., Joanna M. Biernacka, Ph.D., Mark A. Frye, M.D.*

**SUMMARY:**
Introduction: Mortality due to cardiovascular disease (CVD) in bipolar disorder (BD) is more than 2-fold higher than the general population. While the underlying pathophysiology of this comorbidity is not known, it is unlikely that classical CVD risk factors alone account for this association. There has been increasing interest in investigating a potentially shared inflammatory process. The aim of this study was to examine cardiac disease and hypertension phenotypes in patients with BD from the Mayo Clinic Individualized Medicine Bipolar Biobank.
Methods: This study was based on a sample from a BD biobank. Patients with BD type I, II or schizoaffective BD type had diagnosis confirmed by Structured Clinical Interview for DSM-IV-TR disorders (SCID). Cardiac disease (i.e. myocardial infarction, congestive heart failure, arrhythmia) and hypertension were assessed using the 4-point Cumulative Illness Rating Scale (CIRS). Cardiac and hypertensive diseases were defined as having a score of ≥ 2 (mild symptom severity). Univariate logistic regression models were used to compare several characteristics between patients with and without cardiac disease, and in a similar way between patients with and without hypertension. Multivariable logistic regression models were developed to adjust for potential confounders.
Results: 988 patients (mean age 42.4±15 years, 60% women, 71% BPI) were included in the analysis. 39% reported a history of nicotine dependence and 33% of patients were on an atypical antipsychotic. 14% of patients reported a cardiac disease and 28% reported hypertension. In a multivariable model,

older age [odds ratio (OR) 1.04, 95% CI 1.02-1.05), hypertension (OR 2.22, 95% CI 1.52-3.25) and history of psychosis (OR 1.51, 95% CI 1.05-2.17) were associated with cardiac disease. Gender, BMI, current smoking, alcohol abuse or the current use of atypical antipsychotics were not associated with cardiac disease. Similarly in a multivariate model, older age (OR 1.06, 95% CI 1.05-1.08), cardiac disease (OR 1.62, 95% CI 0.99-2.66), male gender (OR 1.47, 95% CI 0.97-2.21) and higher BMI (OR 1.04, 95% CI 1.01-1.08) were associated with hypertension.
Conclusion: These data suggest that the risk factors for cardiac disease and hypertension in bipolar disorder may be different. While age and hypertension were associated with cardiac disease, no other known risk factors for cardiac disease (gender, smoking, obesity) were identified. Further evaluation of the role of psychosis, a likely marker for illness virulence and the loss of female gender CVD risk advantage in cardiac diseases in BD are encouraged.

**NR7- 67**

**ASSESSMENT OF MIXED DEPRESSION USING A MODIFIED VERSION OF THE HYPOMANIA CHECKLIST-32**

*Lead Author: Miguel L. Prieto, M.D.*
*Co-Author(s): Eric A. Youngstrom, Ph.D., Danilo Quiroz, M.D., Aysegul Ozerdem, M.D., Ph.D., Kursat Altinbas, M.D., Manuel E. Fuentes, M.D., Nefize Yalin, M.D., Zeliha Ersoy, M.D., Omer Aydemir, M.D., Signem Oztekin, M.D., Mark A. Frye, M.D.*

**SUMMARY:**
Introduction: Mixed depression (MxD) is a common presentation in both bipolar disorder and major depression. While there has been the recognition of a mixed features specifier in DSM5, specific phenomenology and potential differences in bipolar vs. unipolar disorder have not been studied. Furthermore, symptom severity measurement of MxD has relied on instruments originally designed for acute mania (i.e. Young Mania Rating Scale (YMRS)]. The aim of this study was to evaluate the psychometric properties of a modified version of a self-report screening scale for bipolar disorder [Hypomania Checklist – 32 (HCL-32)] when used to assess current manic/hypomanic symptoms in patients with depression.
Methods: This is a multi-national study where patients seeking care for any bipolar or unipolar depression were invited. The sample included 99 patients from USA, 34 from Chile and 69 from Turkey. 94 patients had bipolar disorder and 108 had major depressive disorder. The mood diagnosis was confirmed with the Structured Clinical Interview for DSM-IV-TR (SCID). Manic/hypomanic symptoms were rated by a clinician using the YMRS. Patients self-reported features of mania/hypomania by filling out a modified version of the Hypomania Checklist – 32 (mHCL-32), which was revised to assess current instead of lifetime symptoms. A latent class analysis was conducted using mHCL-32 items to identify groups of patients who shared similar patterns of mHCL-32 item endorsement. Chi-squared, t-test and Wilcoxon Rank Sum tests were utilized to compare the classes.
Results: 184 patients with complete mHCL-32 data were included. The latent class analysis yielded 3 classes that did not differ by mood diagnosis [bipolar vs. unipolar, p=0.7]. Conversely, there were significant differences in YMRS scores [class 1: median 2, interquartile range (IQR) 1-3; class 2: median 3, IQR 1-4; class 3: median 3, IQR 2-4; p=0.001)], anxiety symptoms [Generalized Anxiety Disorder scale – 7 (GAD-7); class 1: median 11, IQR 5-15; class 2: median 14; IQR 10-18; class 3: median 17, IQR 11-21; p=0.001), and self-reported alcohol consumption [Alcohol Use Disorders Identification Test (AUDIT); class 1: median 1, IQR 0-3; class 2: median 2, IQR 1-7; class 3: median 1, IQR 0-4; p=0.02]. Patients in class 2 endorsed more items related to elation / increased goal-directed activity / hypersexuality / talkativeness. Patients in class 3 endorsed more items associated with risk-taking behavior / irritability / substance use. Class 2 grouped patients with high scores of mHCL-32 subscale #1 (p<0.0001) and class 3 grouped patients with high scores of subscale #2 (p<0.0001).
Conclusion: Within patients who sought medical care due to depression, self-reported manic/hypomanic symptoms assessed by the mHCL-32 scale distinguished 3 classes, which did not differ on diagnosis, but presented with different symptom profiles. The mHCL-32 scale may aid in better understand the phenomenology of MxD.

**NR7- 68**

**A 68-YEAR OLD CAUCASIAN FEMALE WHO PRESENTED TO THE OUTPATIENT CLINIC WITH GENERALIZED PRURITUS**

*Lead Author: Muhammad Puri, M.D., M.P.H.*
*Co-Author(s): Kalliopi Stamatina MD*

**SUMMARY:**
The patient being presented in this case report is a 68 year old caucasian female, who presented into our Outpatient clinic with a chief complaint of generalized pruritus. She reported that this condition had first presented two year before, when she began feeling nervous and had sensations of insects crawling on her body. During initial interviewing she again started experiencing crawling feelings on her body and scalp, and she intensely started to scratch her scalp, arms, and lower back. After further questioning she alleged that she has insects crawling on her scalp and she could see some small worms coming out from the lessons on her body. She brought several scrapings from her lessons with her for examination. The patient also reported that she has sprayed her trailer several times for fleas, and that she has used multiple times in the past nizoral shampoo, doxycycline and elimite creams, and vermox. Examination revealed a pleasant and cooperative anxious caucasian female in no distress. Numerous excoriations on both upper extremities, lower back, and scalp were noted. A purulent, scant amount of serous fluid was seen in the lessons, and some had keratin deposits. Laboratory examinations revealed normal serum electrolytes and CBC, negative serum ANCA, negative serum ANA and negative DS-DNA antibody. Serum TSH was also within normal limits. Biopsy was conducted from scraping of the lesions, and showed non-specific inflammation, and negative results for fungus with KOH preparation.
After the results of the biopsy were reviewed patient was started on treatment with Olanzapine 5mg/day. In a one month follow-up visit, the patient reported that the parasites no longer troubled her and her dose was increased to 10 mg/day. Within a period of six-months under therapy with Olanzapine the patient presented in complete remission. No adverse effects were reported by the patient and the treatment was tapered off. The patient was being followed for the following 6 months and she remained stable with no relapse to her previous symptoms.

**NR7- 69**

**A MISSING LINK BETWEEN ANXIETY DISORDERS AND MIGRAINE: THE PAIN PROCESSING MODEL**

*Lead Author: Diego Quattrone, M.D.*
*Co-Author(s): Massimo Autunno, M.D., Antonio Bruno, M.D., Ph.D., Maria Letizia Caracciolo, M.D., Simona Lorusso, M.D., Maria Rosaria Anna Muscatello, M.D., Ph.D., Gianluca Pandolfo, M.D., Ph.D., Giuseppe Scimeca, Psy.D., Ph.D., Rocco A. Zoccali, M.D., Prof.*

**SUMMARY:**

Background

The association between migraine and anxiety disorders has been reported in several clinical and population-based studies, with each condition predicting the onset of the other. The interrelationship between the two conditions is observed even after controlling for mood disorders and gender, suggesting shared etiologic mechanisms.

Chronic migraine may be mediated by the cascade of neuronal events associated with central sensitization to pain. The electrophysiological correlates of sensitization (e.g.: deficit of habituation to noxious stimuli) and its clinical manifestation (cutaneous allodynia), are indicative of a state in which pain processing is mediated by abnormally excited neural networks. Brain networks implicated in pain processing are also linked to anxiety-associated circuitry. This interconnected way is involved in Anxiety Sensitivity (AS), namely the fear of anxiety-related sensations.

We hypothesized that the sensory and affective components of pain are co-sensitized and AS can influence anxiety and headache attacks either directly, through neuronal hyperexcitability and dysfunctional pain modulation, or indirectly, through pathways such as pharmacological overuse.

Method

Consecutive outpatients with migraine in the Headache Center of the Department of Neuroscience, University of Messina, were recruited. Generalized Anxiety Disorder (GAD) was diagnosed using Structured Interview for DSM-IV TR; chronic migraine was diagnosed according the ICHD-2 criteria. The following instruments were administered to each subject: Migraine Disability Assessment (MIDAS), Generalized Anxiety Disorder 7-item (GAD-7), Anxiety Sensitivity Index-3 (ASI-3), Allodynia Symptom Checklist (ASC), Panic-Agoraphobic Spectrum Lifetime (PAS). Linear regression analysis was performed to evaluate the relationship between the collected variables.

Results

Eighty-eight patients completed the study. Allodynia severity was associated with Anxiety Sensitivity (p=0.029). Noteworthy, “thermal” subdomain of allodynia, mediated by C and Aδ nociceptive fibers, had a strong direct loading on “cognitive” subdomain of AS (p<.0001) and on “physical” subdomain of AS (p<.0001)

Furthermore, after performing regression analysis, “thermal” allodynia and “cognitive” AS resulted good predictors of GAD (p=.001).

Conclusions

Findings are consistent with our hypothesis that the sensitized networks due to abnormal neuronal activity within the nociceptive pathway may explain the significant comorbidity between anxiety disorders and migraine.

The persistent pain perception could lead to a gray matter loss in the dorsolateral prefrontal cortex, the thalamus, and the temporal cortex and thereby may contribute to both cognitive dysfunction and reduction of the corticothalamic inhibition on pain pathway, increasing pain and fear of pain.

References

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**NR7- 70**

**A 5-YEAR PROSPECTIVE STUDY OF PREDICTORS FOR FUNCTIONAL AND WORK DISABILITY AMONG PRIMARY CARE PATIENTS WITH DEPRESSIVE DISORDERS**

*Lead Author: Kirsi Riihimäki, M.D.*
*Co-Author(s): Erkki Isometsä, M.D., Ph.D., Maria Vuorilehto, M.D., Ph.D.*

**SUMMARY:**

Introduction: We report the first prospective long-term study on predictors for functional and work disability among primary care patients with depressive disorders.

Methods: The Vantaa Primary Care Depression Study followed up prospectively 137 patients with depressive disorders for 5 years with a life chart. Information on level of functioning in general and in different dimensions, employment, sick leaves and disability pensions were obtained from interviews and patient records.

Results: Level of functioning and work ability were strongly associated with time spent depressed and/or current severity of depression. Patients who belonged to the labour force at baseline spent one-third of the follow-up off work due to depression; two-thirds were granted sick leaves, and one-tenth a disability pension due to depression. Longer duration of depression, co-morbid disorders and having received social assistance predicted dropping out from work.

Conclusions: Duration of depressive episodes appears decisive for long-term disability among primary care patients with depression. Patients spent one-third of the follow-up off work due to depression, and remaining outside the labour force is a common outcome. Psychiatric and somatic co-morbidities, education and socio-economic means influence the level of functioning and ability to work, but are not equally important for all areas of life.

**NR7- 71**

**VIVID IMAGERY IN SCHIZOPHRENIA SPECTRUM DISORDERS: PHENOMENOLOGICAL CONCEPTS DESCRIBING ANOMALOUS IMAGINATION**

*Lead Author: Andreas Rosén-Rasmussen, M.D.*
*Co-Author(s): Julie Nordgaard, M.D., Ph.D., Josef Parnas, M.D., Professor, Dr. Med. Scient.*

**SUMMARY:**

Introduction:

Historically “predominance of inner fantasy life” was an important aspect of Bleuler’s concept of schizophrenic autism. However, the psychopathological concepts addressing phenomena of imagination are few and not well defined.

The goal of our project is to clarify and enrich the psychopathological tools addressing imaginative experiences in schizophre-

nia spectrum disorders (SSD). We will try to clarify whether these phenomena exhibit a structure specific to SSD with the purpose of sharpening diagnostic boundaries, assist differential diagnosis, and facilitate early detection of psychosis.
Methods:
The first part of the project is descriptive and conceptual. Our goal is to construct a symptom checklist for a semi-structured interview targeting varieties of anomalous imagination. This phase consists of interaction between explorative, clinical interviews and theoretical considerations based on the existing literature and resources from contemporary philosophy of mind and phenomenology.
The second part of the project will be an empirical study which will examine the diagnostic specificity of the items in the symptom checklist. Two groups of patients with SSD and obsessive-compulsive disorder, independently diagnosed with a diagnostic interview (PSE), will be interviewed with the symptom checklist developed in the first phase.
Results:
We present qualitative data from the first, descriptive phase of the study. So far we have made explorative interviews with six first-admitted patients diagnosed with SSD.
These patients describe frequent “vivid images”. Sometimes they are able to explore their mental images in detail for many minutes. The images acquire a temporal and structural stability, a sense of spatiality, and a form of autonomous flow to which the patient is a passive observer with a sense of inner distance to the experience.
This differs radically from phenomenological analyses of imagination in general (E. Husserl, JP. Sartre) that point out that a mental image is not “an object in the mind” that is observed, but more a relation, a medium through which a person intends the content of the imagination. Imaginations are vague, unstable, and lack temporal constancy. Even more importantly, a person normally doesn’t experience mental images with a sense of distance to the images as “something other” that faces his consciousness.
In contrast, the patients describe an objectivation of mental images. This implies a disturbance of the first-person perspective where the phenomenological structure of the inner images is transformed from an intentional medium into an inner object.
Discussion and conclusion:
We think these preliminary data point to the importance of the domain of imagination in the psychopathology of SSD. Furthermore, they provide new, tentative concepts describing varieties of anomalous imagination suitable for the planned empirical study described above.

**NR7- 72**

**NON-CATATONIC MUTISM RESPONSIVE TO OLANZAPINE IN A PSYCHOTIC ADOLESCENT**

*Lead Author: Arlenne Shapov, M.D.*
*Co-Author(s): Muhammad Waqar Azeem, M.D., Jeffrey Landau, M.D.*

**SUMMARY:**

ABSTRACT:
Mutism is the inability or unwillingness to speak resulting in an absence or marked paucity of verbal output (1). It rarely presents as an isolated entity and often emerges in association with other disturbances in behavior, thought processes, affect, or level of consciousness (2). The most common disturbance of behavior occurring with mutism is catatonia, a syndrome comprising marked psychomotor disturbances (1). Catatonia and its associated psychomotor symptoms respond well to sedative anticonvulsant treatment and electroconvulsive therapy (3). Nonetheless, in the cases where mutism occurs in the absence of other catatonic symptoms, effective treatments are described less frequently in the literature. We describe the case of an adolescent male who suffered from long-standing non-catatonic mutism in association with anxiety and other psychotic symptoms, and whose mutism responded well to the initiation and maintenance of olanzapine therapy alone.
EDUCATIONAL OBJECTIVES:
1. At the end of the session, the attendee will be able to recognize the clinical presentation, diagnosis, accompanying symptoms, and possible treatment for mutism.
2. At the end of the session, the attendee will understand that mutism in the absence of catatonia may readily respond to antipsychotic therapy alone.
3. At the end of the session, the attendee will understand that in the cases where mutism is accompanied by symptoms of psychosis and anxiety, an antipsychotic with intrinsic anxiolytic properties such as olanzapine may be a successful treatment option.

**NR7-73**

**THE CLINICAL CHARACTERISTICS OF SCHIZOPHRENIA PATIENTS ACCORDING THE PERSISTENCE IN THE LINGUISTIC COMPLEXITY OF AVH WITH ANTIPSYCHOTICS TREATMENT**

*Lead Author: Sam Yi Shin, M.D.*
*Co-Author(s): Jae Seung Jang, M.D., Ph.D., Samuel S Hwang, Ph.D., Nam Young Lee, M.D., Ph.D., In Won Chung, M.D., Ph.D., Sung Min Shin, R.N., Tak Youn, M.D., Ph.D., Yong Sik Kim, M.D., Ph.D.*

**SUMMARY:**

Background: Auditory verbal hallucination (AVH) is one of the most frequent and characteristic symptoms in patients with schizophrenia. Linguistic complexity of AVH, whether persistence in the sentence type (ST-P) or non-persistence in the ST (ST-NP) may reflect the treatment response of AVH.
Aim: To examine the differences in the clinical characteristics of patients with schizophrenia between the patient with ST-P and ST-NP of AVH with 6 month antipsychotics treatment.
Method: The 33 of schizophrenia patients who reported active ST-P AVH were selected. Subjects were assessed at baseline and 6 month later using PANSS, CGI-S, GAF, PSYRATS-AHS and linguistic complexity of AVH whether ST-P or ST-NP.
Result: Among the subjects who showed the ST of linguistic complexity of AVH, the 30.3% of the patients showed the persistence in ST of AVH and 69.7% of the patients changed from ST-P to ST-NP. There was no statistical difference between ST and ST-NP group in age, gender, education, duration of illness, duration of treatment and history of psychiatric medication. The PANSS total, positive subscale and cognitive clusters of PSYRATS-AHS scores were significantly different at the 6-month follow up between two groups. Among the items of PSYRATS, frequency, duration, location and loudness did not show the significant differences in the changes from baseline to 6 month after between ST-P and ST-NP group. In contrast, beliefs re-origin of voices and controllability of voices were statisti-

cally significantly differences in the changes from baseline to 6 month after between ST-P and ST-NP group.
Conclusion: The change in linguistic complexity of AVH from ST to non-ST could provide the useful measure to estimate the treatment response of AVH.

**Nr7-74**
**EXAMINING THE ASSOCIATION BETWEEN PTSD AND ADHD: A SYSTEMATIC REVIEW AND META-ANALYSIS**
*Lead Author: Andrea E. Spencer, M.D.*
*Co-Author(s): Joseph Biederman, M.D., Olivia Bogucki, Stephen Faraone, Ph.D., Mohammad Milad, Ph.D., Amanda Pope, Thomas Spencer, M.D., Mai Uchida, M.D., Yvonne Woodworth*

**SUMMARY:**
Introduction. Posttraumatic Stress Disorder (PTSD) is a prevalent and morbid disorder for which there are few known effective treatments. Only a minority of adults and children who experience a traumatic event develop PTSD, suggesting that some individuals may have predisposing risk factors. Emerging data from clinical and epidemiological samples document a significant association between Attention Deficit Hyperactivity Disorder (ADHD) and PTSD, suggesting that ADHD could be such a risk factor. ADHD is a compelling antecedent risk factor for PTSD since it onsets in the preschool years and can be effectively treated. Establishing this association has important clinical, scientific and public health implications.
Purpose. The aim of this study was to examine the available evidence linking ADHD to PTSD. We conducted a systematic review of the existing literature that examined the bidirectional relationship between ADHD and PTSD.
Methods. We performed a literature search through PubMed and PsycINFO using the algorithm (posttraumatic stress disorder OR PTSD) AND (ADHD OR Attention Deficit Hyperactivity Disorder OR ADD OR Attention Deficit Disorder OR Hyperkinetic Syndrome OR Minimal Brain Dysfunction), and mined references of relevant articles. We included only original studies in English that specifically evaluated the relationship between PTSD and ADHD.
Results. Out of 394 unique articles, thirty articles met inclusion criteria.Twenty-two included enough information to be used in a meta-analysis. Fourteen of sixteen studies that compared ADHD and PTSD in youth and twelve of fourteen studies that compared these disorders in children showed a positive association between the two disorders. All articles that reported on symptom correlations reported positive correlations between the symptom severities of both disorders.
Conclusion. Our results indicate that there was a robust and bidirectional association between ADHD and PTSD in both adults and children. Furthermore, these results suggest that there is a correlation between symptom severities where the two disorders exist. Further studies should focus on better understanding the neurobiological underpinnings of this relationship, and should investigate how treatment of ADHD affects vulnerability to PTSD.

**NR7-75**
**ASTHMA, DEPRESSION, AND SUICIDALITY: RESULTS FROM THE 2007, 2009, AND 2011 YOUTH RISK BEHAVIOR SURVEY**
*Lead Author: Leah Steinberg, M.D.*
*Co-Author(s): Erick Messias, M.D., Ph.D., Ivanjo Aldea, M.D.*

**SUMMARY:**
Introduction: With the growing evidence of asthma being associated with depression and suicidal behavior, data from the CDC's Youth Risk Behavior Survey (YRBS) may be used in assessing this relationship in a nationally representative sample of American high school students. Hypothesis: we hypothesize that adolescents with a history of asthma will endorse higher rates of suicidality than those with no asthma history. Methods: Data comes from the 2007 (n = 14,041), 2009 (n = 16,410) and 2011 (n=14,186) CDC's YRBS, which provides self-reports of nationally representative samples of US high school students. Exposures include lifetime and current asthma. Outcomes include four suicidality variables: suicidal ideation, suicide plan, suicide attempt, and attempt requiring medical treatment. Weighted prevalence estimates are calculated. A series of logistic regressions models were estimated to generate adjusted odds ratios. Results: In an unadjusted comparison to those students without asthma, those with lifetime asthma were more likely to report having had a suicide attempt (crude odds ratio 1.5, 95% C.I. 1.3-1.8). After adjusting for age, sex, race, alcohol and tobacco use, and presence of depressive mood, the association between lifetime asthma and suicide attempt, was no longer significant (adjusted OR 1.2, 95% C.I. 1-1.6). In an unadjusted comparison to those students without asthma, those with current asthma were more likely to report having had a suicide attempt (crude odds ratio 1.4, 95% C.I. 1.1-1.9). After adjusting for age, sex, race, alcohol and tobacco use, and presence of depressive mood, the association between current asthma and suicide attempt, was no longer significant (adjusted OR 1.2 95% C.I. 0.8-1.7).The same pattern was seen in all suicide outcomes in the 2011 YRBS sample. The analyses of the 2007 and 2009 samples found a small, but statistically significant, association between asthma and suicidality after adjusting for depressive mood. Conclusion: Findings from the 2007 and 2009 samples are in accordance with previous research, which show youths with asthma are significantly more likely to have suicidal behavior, when compared to those without asthma. In the 2011 sample, this increase in suicidality seems to be due to the increased prevalence of depression among those teens with asthma. Discussion: Those caring for teens with asthma should be aware of the increased depression risk and the potential associated increased suicidality in this population.

**NR7-76**
**MOTHER-INFANT DYADIC GROUP THERAPY: A PROCESS TO TREAT PERINATAL DEPRESSION WHILE IMPROVING ACCESS TO CARE IN A MILITARY TREATMENT FACILITY**
*Lead Author: Melinda A. Thiam, M.D.*
*Co-Author(s): Erika Kappes, DO; Tangeneare Singh, MD*

**SUMMARY:**
Background: Perinatal depression is a serious disorder that negatively impacts the mother, and in severe cases, can lead to maternal suicide or infanticide. Perinatal depression doesn't just affect the mother, but also negatively impacts mother-infant bonding, infant development, as well as a new mother's relationship with spouse and family. The military family is a particular population at increased risk of developing perinatal depression given pre-existing mental health challenges innate to the military family. Most studies in the military have focused

on prevention, incidence, and early identification of perinatal depression. Studies examining depression in military families identifies a need, but recognize that treatment is limited by availability, accessibility and acceptability of behavioral health. In the National Capital Area, Walter Reed National Military Medical center and Fort Belvoir Community hospital have restricted behavioral health treatment to active duty only due to limited resources. At both facilities, dependent spouses with perinatal distress during or after pregnancy often struggle to access appropriate care. I some cases, limited access has led to mothers with perinatal depress seeking treatment in the Emergency Room. We desired to find a treatment modality that could serve as a form of treatment as well as improve access to care

Methods: We conducted a literature review to identify studies that addressed perinatal depression in a military population. We also reviewed studies that addressed efficacy of group therapy. During this literature review, we also discovered research emphasizing the need to treat the mother-infant bond as a component of treatment. We found study about mother-infant group psychotherapy as a possible means to treat perinatal depression in the mother and also addressed strengthening the mother-infant relationship. We adapted this dyadic group model to one that could be implemented in a military treatment facility and run by adult behavior health. We pulled many different therapy resources addressing perinatal depression, infant attachment and mother infant therapies to develop a curriculum to use as a framework for the group curriculum. In difference to prior studies, we created the group as an open, long term group therapy compared to time limited group or individual psychotherapy that was open to both active duty and dependent military mothers.

Discussion: We found mother-infant group therapy treatment modality improved access to care for military dependent mothers, addressed and facilitated the mother-infant relationship and serve as supportive environment where mothers felt validated and supported by other mothers. We did not create this group as a research study, but instead implemented it as a process improvement project. We believe this model can be feasible, reproducible and beneficial for treatment of perinatal depression and deserves further research.

**NR7- 77**

**CLINICAL CHARACTERISTICS OF DEPRESSED PATIENTS WITH SLEEP DISTURBANCE: INSOMNIA VERSUS HYPERSOMNIA VERSUS BOTH**

*Lead Author: Sri Venkata Uppalapati, M.D.*
*Co-Author(s): Cherilyn DeSouza, M.D., William F. Gabrielli Jr. M.D., Edward N. Hunter Ph.D., Elizabeth J. Nickel, M.A., Ekkehard Othmer, M.D., Ph.D., Elizabeth C. Penick, Ph.D., Elizabeth S. Yaffe, M.D.*

**SUMMARY:**

Objective: To compare the clinical characteristics of a large group of treatment-seeking, depressed outpatients who reported different patterns of sleep disturbance during their illness.

Method: Of 1,458 consecutive patients seeking treatment in an Outpatient Psychiatry Clinic, 1,002 (60%) met criteria for major depression by a highly detailed, structured interview. Of these 1,002 patients, three quarters (N=752) reported one or more patterns of sleep disturbance: insomnia only=232; hypersomnia only=119; both insomnia and hypersomnia=401. A structured diagnostic interview and written questionnaires were used to document sociodemographic features, a family history of psychiatric illness, psychiatric comorbidity, treatment history, age of depression onset, lifetime depressive symptoms, early childhood traits and measures of current psychosocial functioning. Results: Patients with insomnia only were significantly older (46 years) than patients with both insomnia and hypersomnia (36 years) who were significantly older than patients with hypersomnia only (33 years). Otherwise, the groups did not differ substantially from each other on sociodemographic features. No family history, early childhood, or treatment differences were found between the three groups. Patients with hypersomnia only and patients with both patterns of disturbance reported the earliest ages of onset of depression; those with insomnia only reported the oldest age of onset. The greatest number of lifetime depressive symptoms was endorsed by patients with both insomnia and hypersomnia followed by the hypersomnia only group. The insomnia only group endorsed the fewest depressive symptoms that included suicidal ideation. Patients with both insomnia and hypersomnia showed significantly more psychiatric comorbidity than the insomnia only group. Two of the seven measures of current psychosocial functioning favored the insomnia group. Conclusions: Depressed patients suffering from only insomnia were older, developed their illness at a later age, reported fewer lifetime depressive symptoms and tended to have the least amount of psychiatric comorbidity, even when age is controlled. The differences appeared to be largely driven by the presence of hypersomnia which seemed to be most strongly associated with greater psychiatric pathology. Clinicians might want to be alert to the added burden of suffering that hypersomnia places on the depressed patient.

**NR7- 78**

**COGNITION AND SYMPTOM PROFILES VARY WITH LEUKOCYTE TELOMERE LENGTH IN SCHIZOPHRENIA**

*Lead Author: Leila M. Vaez-Azizi, M.D.*
*Co-Author(s): Ray Goetz, Ph.D., Roxana Dracxler, M.D., Ph.D., Dolores Malaspina, M.D., M.S.P.H., Mary Perrin, DrPH, Julie Walsh-Messinger, Ph.D*

**SUMMARY:**

Objective/Hypothesis: Telomere length is known to be associated with advanced paternal age at conception, and there is ample evidence for a subtype within schizophrenia characterized by cases with older fathers. This pilot study examined telomere length in schizophrenia cases and healthy controls and if it is related to the variability in symptoms and cognition, given that schizophrenia is a syndrome with marked heterogeneity that is yet to be fully illuminated.

Method: For leukocyte telomere length (LTL), DNA was extracted from lymphocytes. LTL was measured by PCR in cases and controls and defined as long based on the outliers in the normal distribution of the measure using an interquartile range of 1.5 based on the SPSS “Examine” module. Symptoms were assessed using the Positive and Negative Symptom scale and cognition was assessed with the WAIS. The male and female cases with elongated-LTL were compared to the other respective male and female cases using the student’s t-test.

Results: Mean LTL did not differ between groups of 53 cases

and 20 controls, but a subgroup of cases had significantly elongated LTL, statistically defined as those with outlier values on the SPSS "Examine" procedure. Five male cases and two female cases were defined as having elongated LTL. The elongated-telomere male cases had significantly older fathers (38.0 +/- 2.8 vs. 30.1 +/- 8.9, separate variance estimate p = .001), lower positive psychotic (8.0 +/- 2.0 vs. 12.7 +/- 4.9, p = .047) and autistic symptoms (7.4 +/- 1.5 vs. 10.8 +/- 2.9, p = .016); they had higher FSIQ (101.3 +/- 19.2 vs. 84.9 +/- 14.6, p = .057) and VIQ (105.8 +/- 19.7 vs. 85.6 +/- 15.5, p = .027), but no difference in PIQ, and producing a mean VIQ-PIQ difference of 10 points. They were also better educated (5.6 +/- 2.1 vs. 3.2 +/- 1.8, p = .015). Female cases with longer LTL also had higher VIQ than other females (95.50 +/- 16.23 vs. 88.29 +/- 16.92) and a VIQ-PIQ split, as observed in male cases with elongated-LTL (95.5 – 83.0 = 12 points), although these were not statistically significant.
Discussion: Telomere length has genetic and epigenetic significance, and in healthy people it is associated with greater cognitive reserve and a longer life. In this pilot study, schizophrenia cases with elongated telomeres showed relatively protected cognitive functioning in verbal IQ, with a unique symptom profile. Results from this pilot study provide evidence for telomere length as a biomarker for a particular symptom and cognitive phenotype. Schizophrenia cases with elongated LTL may have different functioning, prognosis, and respond better to particular treatments. Replication studies are needed to verify these results, and next steps would include looking at differences in functional outcome for schizophrenia cases with elongated LTL.

**Nr7- 79**

**THE EFFECTIVENESS OF RESTARTED LITHIUM TREATMENT AFTER DISCONTINUATION: REVIEWING THE EVIDENCE FOR DISCONTINUATION-INDUCED REFRACTORINESS**

*Lead Author: Annet H. van Bergen, M.D.*
*Co-Author(s): Elsje Benthem, M.D., Marco PM Boks, M.D., Ph.D., Ralph W Kupka, M.D., Ph.D., Eline J Regeer, M.D., Ph.D., Christine de Vries, M.D.*

**SUMMARY:**

Objectives:
We sought to determine whether the risk of relapse in patients with bipolar disorder is higher after discontinuation and restart of lithium treatment as compared to continuous lithium treatment in these same patients.
Methods:
We conducted literature searches in the Pubmed, Embase, Cochrane, and PsycINFO databases with cross-reference checks. Relevant data were extracted and pooled for meta-analysis.
Results:
Five relevant studies were included for review, of which three studies qualified for the meta-analysis and included a total of 212 analyzed cases. Two studies found lithium to be less effective after discontinuation and reintroduction and three studies found no decreased effectiveness. The pooled odds ratio for the occurrence of one or more relapses after interruption of lithium treatment compared to continuous treatment was 1.40 (95% confidence interval: 0.85–2.31; p = 0.19).
Conclusions:
Although studies are scarce, review and meta-analysis of the available literature does not provide convincing evidence that lithium is less effective when treatment is discontinued and restarted, compared to uninterrupted treatment

**Nr7- 80**

**SENSORY PROCESSING DISORDERS AND DEVELOPMENTAL PSYCHOPATHOLOGY IN CHILDREN WITH EPILEPSY**

*Lead Author: Jolien S. van Campen, M.D.*
*Co-Author(s): Nienke J. Kleinrensink, Floor E. Jansen, M.D., Ph.D., M. Joels, M.Sc., Ph.D., K.P.J. Braun, M.D., Ph.D., H. Bruining, M.D., Ph.D.*

**SUMMARY:**

Background: Developmental psychopathology and childhood epilepsy often co-occur, suggesting a shared etiology. A candidate theory for this underlying mechanism is the imbalance between neuronal inhibition and excitation. The state of general neuronal hyper excitability might be clinically reflected by an altered sensitivity to sensory stimuli. To test this hypothesis, we investigated sensory processing profiles in children with epilepsy, and related these to severity of developmental psychopathology as well as epilepsy characteristics.
Methods: Parents or caregivers of 376 children with active epilepsy (aged 4-17 years) were sent validated questionnaires on sensory information processing (Sensory Profile), autism spectrum disorders (Social Responsiveness Scale) and attention deficit hyperactivity disorders (Strengths and Difficulties Questionnaire). Additionally, they were asked for information on epilepsy characteristics. Further information on epilepsy characteristics and clinical diagnoses was extracted from patient files.
Results: The prevalence of sensory processing disorders was increased in children with epilepsy compared to the validation cohort. Sensory processing problems were reflected by a low reported threshold for sensory stimulation, that negatively correlated to the severity of developmental psychopathology, as well as frequency of epileptic seizures and number of antiepileptic drugs used. Interestingly, sensory processing problems were also present in children with epilepsy without symptoms of developmental psychopathology.
Conclusion: Our results indicate that sensory processing disorders in childhood epilepsy are reflected by a low threshold for sensory stimulation. This lowered threshold and its relation to severity of epilepsy and co-morbid developmental psychopathology, support the hypothesis that these often co-occurring disorders share a common pathophysiology, characterized by neuronal hyper excitability. Better insight into the underlying mechanisms that link developmental disorders and epilepsy may provide a basis for new treatment strategies.

**NR7- 81**

**THE RISK DIFFERENCE IN BORDERLINE PERSONALITY SYMPTOMS BETWEEN WITH AND WITHOUT ALCOHOL USE DISORDER IN THE NESARC WAVE 2 (2004-2005)**

*Lead Author: Shaocheng Wang, M.D., Ph.D.*
*Co-Author(s): Brion S. Maher, Ph.D.*

**SUMMARY:**

Aims: Borderline personality disorder (BPD) is highly comorbid with alcohol use disorders (AUDs, alcohol abuse and alcohol dependence) but little is known about the associations between individual BPD symptoms and alcohol use disorder.

This study compares the frequency of each BPD symptom in individuals with AUDs to those without AUDs.
Methods: Participants with BPD were extracted from National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) Wave 2 (2004-2005) and were further categorized into two groups based on the status of AUDs. The data were weighted. The study examined the difference in the risk of each BPD symptom between participants with and without AUDs. Eighteen questions from the NESARC questionnaire were used to assess BPD symptoms. Multivariate logistic regression analyses were used, adjusted for gender, age, and race/ethnicity by STATA. BPD symptoms were the predictors and having a lifetime AUD diagnosis was the outcome.
Results: Of 2,231 participants with BPD, 1,208 had an AUD and 1,023 did not. Males were more likely to have lifetime AUDs than female (45% vs. 55%, OR = 3.26, 95% CI = 2.58-4.13, p <0.001). Compared to individuals without AUDs, those with AUDs were more likely to have unstable and intense interpersonal relationship (57% vs. 43%, OR = 1.27, 95% CI = 1.01-1.61, p =0.043), to have impulsivity in at least two areas that are potentially self-damaging (58% vs. 42%, OR= 1.62, 95% CI= 1.26-2.09, p<0.001), and to have recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior (26% vs. 74%, OR = 1.43, 95% CI = 1.09-1.87, p =0.010) after adjusting for gender, age, and race.
Conclusions: An association between AUDs and symptoms indicative of unstable interpersonal relationship, impulsivity and suicidal behaviors were found in individuals with BPD. The results of these analyses can help to identify the group of individuals with BPD who are at higher risk of AUDs.
Financial Support: None

**NR7- 82**

**DIAGNOSTIC PRACTICE OF CHILDREN AND ADOLESCENTS WITH PSYCHOGENIC NONEPILEPTIC SEIZURES (PNES) IN THE PEDIATRIC SETTING: A NATIONAL DANISH SURVEY**

*Lead Author: Bianca T. Wichaidit*
*Co-Author(s): John R. Østergaard, M.D., dr. med. sci., Charlotte U. Rask, M.D., PhD.*

**SUMMARY:**

Objective:
Psychogenic nonepileptic seizures (PNES) are paroxysmal events without concomitant abnormal EEG-changes. PNES is of unknown etiology and appear to be associated with psychosocial stressors. PNES is easily misinterpreted as epilepsy, and misdiagnosis and diagnostic delay is a common reported problem. Timely diagnosis is important, in order to initiate appropriate treatment (psychotherapy), and improve outcome. Formal guidelines on diagnostics are lacking, and more accurate data on clinical practice in the pediatric setting are needed. The aim of this study was to conduct a national questionnaire survey on the practice of diagnosing psychogenic nonepileptic seizures (PNES) in children and adolescents, among pediatricians in Denmark.
Methods: We distributed a questionnaire to all pediatricians working in the field of neuro-pediatrics and/or social-pediatrics in the hospital setting in Denmark. The questionnaire was developed de novo and reviewed by an expert panel, and pilot-tested on 25 trainees in pediatrics.
Sixty-four eligible participants were identified by the chief consultants of the pediatric departments.
Results: Response-rate was 95 % (61/64). The terms regarded most appropriate to use by the majority of the respondents were functional seizures (34 %) and PNES (25 %). Overall, 19 different ICD-10 codes for classification were reported to be used, and 75 % of the respondents reported to use more than one. Inconsistencies were found regarding which history and seizure characteristics to look for in support of PNES, as well as with regard to the use of paraclinical investigations. Video-EEG was reported to be frequently used by only 49 % of the respondents.
Significance: The results of this study suggest a lack of consensus on the diagnostic practice of PNES in children and adolescents in the pediatric setting. This indicate a need for the development of formal guidelines in order to enhance the diagnostics, and thus improvement of the care of children with PNES.

**Nr7- 83**

**NATURALISTIC STUDY OF WEIGHT GAIN WITH ASENAPINE IN PATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Michelle Worthington*
*Co-Author(s): Rif S. El-Mallakh, M.D., Yonglin Gao, M.D.*

**SUMMARY:**

Background: Second generation antipsychotics (SGAs) are frequently used in the treatment of bipolar illness. While older SGAs are associated with significant weight gain, newer agents are believed to be less inclined to induce great weight gain. This notion is based on data obtained from registrational trials in which complicated patients are excluded. We examined weight gain associated with a newer SGA, asenapine, in a naturalistic setting. Method: We performed a retrospective chart review of all patients attending a bipolar clinic. Data were collected regarding demographics, medications being used, and weight at initiation of use of asenapine and again at final observation. Data were compared to patients receiving other SGAs. Results: Of a total of 185 subjects, 20 had received asenapine at some point in time, and 104 received other antipsychotics. There were no differences in baseline weights (184 ± 64.7 lbs for asenapine and 188.3 ± 54.4 lbs for the comparison group, ns), or the final weight (189.8 ± 62.9 for asenapine and 184.4 ± 46.6 lbs for the comparison group, ns). The weight change per month was also non-significant (0.7 ± 1.3 for asenapine versus -0.4 ± 0.3 lbs for comparison group, ns). Consclusion: In naturalistic settings, the newer SGA asenapine does have a desirable weight gain profile, with minimal weight gain.

**NR7- 84**

**SUBJECTIVE EFFECTS OF CANNABIS USE AMONG INPATIENT POPULATION WITH PRIMARY PSYCHOTIC DISORDERS AND MOOD DISORDERS**

*Lead Author: Yang Xu, M.D.*
*Co-Author(s): Michael Colin, M.D., Igor Galynker, M.D., Ph.D., Zimri Yaseen, M.D.*

**SUMMARY:**

Background: There has been increasing focus on cannabis use among individuals with severe mental illnesses. However, there is a lack of knowledge of whether there is a differentiating subjective effect of cannabis use among individuals with bipolar

disorders and individuals with primary psychotic disorders.
Participants: Adults of bother genders on the inpatient units of Beth Israel Medical Center were recruited in this study, if they have a primary psychotic or bipolar disorder and they reported use of cannabis in the past 12 months. Subjects with severe mental retardation, cognitive impairment, or linguistic limitation precluding understanding of the consent or research questions were excluded.
Method: Data was collected once patients were psychiatrically stabilized. Diagnoses of mental illness were based on DSM-IV and were made by the primary treating team. Beck Depression Inventory (BDI), Cannabis Use Disorder Identification Test (CUDIT) and Marijuana Effect Expectancy Questionnaire (MEEQ) were self-rated by patients, while Young Mania Rating Scales were rated by research clinicians. In addition we also assessed responses to the Alcohol Use Disorder Identification Test (AUDIT) and an Alcohol effect expectancy version of the MEEQ (AEEQ) to control for the general intoxication response. Data were analyzed with SPSS 20 statistical software.
Results: Our sample (n=30) was primarily male with an average age of approximately 35. Most participants were ethnic minorities, unemployed, neither married nor cohabiting with partners. Compared to individuals with primary psychotic disorders, individuals with bipolar disorders were found to have higher odds of cannabinoid positive urine toxicology at time of admission, having lifetime use of substances other than alcohol, cannabis or tobacco, using cannabis to "treat depression and improve mood" and "to calm me down when I have too much energy and cannot sleep", whereas they had lower odds of reporting marijuana use "just for fun". However, due to the small sample size, differences were not statistically significant. However, we also found that individuals with bipolar disorders had significantly higher average scores on the CUDIT than individuals with primary psychotic disorders ($p = 0.015$), despite similar scores on YMRS, BDI and AUDIT were found between groups.
Conclusion: These preliminary data suggest that individuals with bipolar disorders may have different reasons for using cannabis and have higher levels of cannabis use and misuse than patients with primary psychotic disorders. Future studies with sufficient sample size are warranted to further investigate differentiating subjective effects of cannabis use in different cognitive and perceptual domains.

**Nr7- 86**

**A STUDY OF DEPRESSION SCREENING IN PRIMARY CARE SETTINGS IN CHINA**

*Lead Author: Layan Zhang, M.D., M.Psy.*
*Co-Author(s): Yanhong Hao, M.D., Eliot Sorel, M.D., Tao Zou, M.D., Ph.D.*

**SUMMARY:**

Background: Major depression is a common and treatable mental disorder that can be costly and debilitating to patients. Depression has been identified as a leading cause of burden in the Global Burden of Disease 1990, 2000 and 2010 studies (Ferrari et al. 2013), and determined as a robust independent risk factor of shortening life span of 25 to 30 years and developing stroke, cancer, cardiovascular disease, and type II Diabetes (Voinov et al. 2013). However, a potentially high hidden prevalence of underdiagnosed and undertreated depression may be existed due to lack of routine depression screening in primary care settings (Rosenthal 2003). The present study was conducted to screen for depression among patients attending primary health care clinics in three weeks at two geographically distant and socio-culturally different regions of China.
Methods: Participants were patients seeing internists at outpatient clinics (functioning as primary care settings in China) in two different parts of China i.e. North and South regions during a period of three weeks. With informed consent, patients were screened for depression using Patient Health Questionnaire (PHQ-9) which has been psychometrically verified for depression screening in Asian primary care settings (Sung et al. 2013).
Results: A total of 823 patients (51.0% women, 49.0% men) attending the primary care clinics were screened. As per PHQ-9, only 8.3% of the whole sample scored 0 corresponding to no depressive symptoms at all. 93.3% of patients had different level of depressive symptoms: 33.0% had minimal (scored 1-4), 34.3% had mild (scored 5-9), 16.4% had moderate (scored 10-14), 5.7% had moderately severe (scored 15-19) and 2.4% had severe depression (scored 20-27). Most patients with depression had medical co-morbidities. In the current study, Diabetes Mellitus was proved to be most common comorbid medical condition in patients having depressive symptoms, followed by Digestive Diseases and Cardiovascular Diseases.
Conclusions: The prevalence of depressive symptoms in patients attending primary care settings in China is strikingly high. Diabetes Mellitus, Digestive Diseases and Cardiovascular Diseases were the most common medical disorders associated with depression.

**NR7- 87**

**IS INCREASED BINDING OF MECP2 TO RELN AND GAD1 REGIONS DRIVEN BY THE INCREASED 5-HMC IN THE PROMOTER REGIONS OF AUTISM SPECTRUM DISORDER?**

*Lead Author: Adrian Zhubi, M.D.*
*Co-Author(s): Ying Chen MD, Erbo Dong PhD, Edwin H Cook MD ,Alessandro Guidotti MD ,Dennis R Grayson PhD*

**SUMMARY:**

Autism Spectrum Disorder (ASD) is characterized by symptoms related to social interactions/communication and restricted and repetitive behaviors. In addition to genetic risk, epigenetic mechanisms, including DNA methylation and histone modifications, may be important in the etiopathogenesis of autism. Several lines of evidence implicate abnormalities in the expression of multiple mRNAs including reelin (RELN), glutamic acid decarboxylase 65 and 67 (GAD2 and 1 genes, respectively). Our project focuses on studying the epigenetic mechanisms underlying the regulation of GAD67 and RELN, specifically with respect to the binding of methyl CpG binding protein-2 (MeCP2) to the corresponding promoters of these genes. To this end, we used human prefrontal cortex (PFC) and cerebellum (CB) isolated from post-mortem brain obtained from the Harvard Brain Tissue Resource Center with permission of the Autism Tissue Program (Autism Speaks). These included 10 control subjects (CON) and 10 ASD. We performed chromatin immunoprecipitation (ChIP) experiments to measure the levels of binding of MeCP2 to the GAD-1, GAD-2, and RELN promoters and gene bodies. Moreover, we also performed methyl DNA immunoprecipitation (MeDIP) and hydroxymethyl DNA immunoprecipitation to measure total 5-methylcytosine (5-mC) and 5-hydroxy methylcytosine (5-hmC) and the ratio of 5-mC

and 5-hmC DNA to the total (5-mC + 5-hmC) in the promoter regions and gene bodies of the same genes. Quantification was done using real time qPCR measurements and the values were expressed as a percent of input DNA in both cases.
Results show a significant (1.5-2 fold) increase in binding of MeCP2 protein to both GAD1 (p=0.04,t-test) and RELN (p=0.03,t-test) promoters in cerebella of ASD when compared with CON. In contrast, MeCP2 binding to the GAD2 promoter region did not show significant changes in ASD vs CON (p=0.32). Furthermore, binding of MeCP2 to the gene bodies of RELN and GAD1/2 was not different between the 2 groups. Similar results were obtained in PFC. With respect to the MeDIP measurements, we were able to detect a significant enrichment in the level of 5-hmC but not of 5-mC at gene promoter regions of RELN (p=0.03, t-test) and GAD1 (p=0.04, t-test) in ASD when compared to CON. Similar measurements in the gene bodies of RELN, GAD1 and GAD2 did not show significant differences between groups. In conclusion, MeCP2 binding to RELN and GAD1 promoter regions is increased in ASD compared to CON, and this might be triggered by an increased enrichment of 5-hmC in the corresponding promoter regions in ASD vs CON.

**Nr7- 89**

**USE AND VALUE OF PERSONAL PSYCHOTHERAPY DURING PSYCHIATRIC TRAINING: A SURVEY OF PSYCHIATRY RESIDENTS IN PENNSYLVANIA, NEW JERSEY AND DELAWARE**

*Lead Author: Aurelia Bizamcer, M.D., Ph.D.*
*Co-Author(s): Jessica Kovach, M.D., Aurelia Bizamcer, Christopher Combs, Ph.D., William R. Dubin, M.D.*

**SUMMARY:**
Objective: This survey examined personal psychotherapy utilized by psychiatric residents as well as the residents' perceptions of the training value of personal psychotherapy.
Methods: We designed and e-mailed a voluntary, anonymous, 10-minute survey on www.SurveyMonkey.com. All 14 Program Directors for programs accredited by the Accreditation Council for Graduate Medical Education in Pennsylvania, New Jersey and Delaware provided emails for current categorical residents. The survey inquired about number of hours spent in various aspects of training, value assigned to aspects of training and to the residents' involvement in their own psychotherapy, and overall resident wellness. The study was e-mailed to 328 psychiatry residents.
Results: The response rate for the survey was 40.5 % (133 residents). The percentage of resident respondents engaged in personal psychotherapy was 26.5%. Most residents described their psychotherapy as dynamic, performed by a psychiatrist (MD or DO) in private practice and not affiliated with the resident's academic center, and attended once weekly. The most common payment method is payment with reimbursement or copay by insurance with an average out-of-pocket expense of $70.60 per session. The most common primary reason for engaging in personal psychotherapy is "self awareness and understanding" with the most frequently reported contributing factors "self awareness and understanding", "general training purpose", and "personal stress". The most common primary reason for not engaging in therapy is "time" and the most common contributing factors are "time", "financial", and "I don't need it". Antidepressants are the most common psychiatric medicine prescribed to residents in psychotherapy with 42.5% of therapy respondents reporting being on an antidepressants. Residents who were in personal psychotherapy were compared to residents who were not in therapy on variables measuring the value of different teaching modalities using t-test for independent samples with a significance level selected of $p<0.05$. These teaching modalities were personal psychotherapy, hours of therapy performed as a resident, didactics, supervision and readings. Residents in personal psychotherapy rated their personal therapy, hours of treating patients with psychotherapy, and hours of supervision as significantly ($p<0.05$) more important (means of 4.79, 4.82 and 4.86, respectively) than residents not in personal psychotherapy (means of 3.53, 4.48 and 4.58, respectively).
Conclusion: If we still value personal psychotherapy as an integral part of training to be a psychotherapist, training programs need to not only encourage participation in personal psychotherapy but also to facilitate access to personal psychotherapy by addressing the main reported barriers to therapy of time, money, and lack of perceived need.

**NEW RESEARCH POSTER SESSION 06**
**NEW RESEARCH POSTER SESSION 1**

**NO. 1**
**PSYCHOPATHOLOGY, TEMPERAMENT AND ATTACHMENT STYLES OF PARENTS WHOSE CHILDREN AND ADOLESCENTS HAVE BEEN SEXUALLY ABUSED**
*Lead Author: Aynil Yenel*
*Co-Author(s): Sermin Kesebir, M.D.*

**SUMMARY:**
The parents of the children and adolescents, who have been sexually abused, are the subject of many studies. There are few studies that analyze the first axis the second axis, the temperament and the attachment styles diagnose systematically.
It was analyzed that 80 mothers and 66 fathers were the parents of children who have been sexually abused. Diagnostic interviews were done with SCID- I and II, temperament and attachment forms were rated with Temps-A Temp. Parents of children without sexual abuse history were included to this study as a control group. Scale and with Adult Attachment Forms Scale. In this study, 11.4% of cases, the perpetrators are the fathers themselves (n=12).
In these, parents attachment forms do not differ from the control group but the temperament forms are found to be more in depressive-anxious and cyclothymic in mothers ($p < 0.05$). The percentage is 81.3% in mothers and 47% in fathers who have sexually abused children as first axis clinical disorders. These percentages were found to be 100% for second axis personality disorders in both mothers and fathers. The most seen diagnoses are anxiety disorders (in mothers 40%, in fathers 21.2%) and affective disorders (in mothers 32.5%, in fathers 9.1%). The most seen personality disorders are addiction (20%) in mothers and obsessive-compulsive (10.6%) and passive aggressiveness in fathers (28.8%) and avoidant personality disorders in both (in mothers 20%, in fathers 13.6%). Self-defeating personality disorders for mothers, 8.8% which are set C personality disorders. This study shows the lack of protective properties of mothers of the children and adolescents that have sexual abuse. This study also showed that it is harder to get in contact with fathers and that they are recessive to talk about sexual abuses as another remarkable fact which makes the study limited.

**NO. 3**
**NALTREXONE, A NOVEL TREATMENT TARGET FOR AMPHETAMINE DEPENDENCE: A TRANSLATIONAL STUDY OF ITS MECHANISM FROM RAT TO MAN**
*Lead Author: Nitya Jayaram-Lindstrom, M.A., Ph.D.*
*Co-Author(s): Mia Eriksson, Ph.D., Johan Franck M.D., Ph.D., Joar Guterstam M.D., Christer Halldin M.D, Ph.D., Jenny Häggkvist Ph.D., Torun Malmlöf Ph.D., Anna Lena Nordström M.D, Ph.D., Tomkuki Saijo M.D., Ph.D., Bjorn Schilström Ph.D*

**SUMMARY:**
INTRODUCTION
Amphetamine activates the brain mesolimbic system and promotes the release of dopamine (DA) in the nucleus accumbens (N.Acc), which has been shown to be important for the reinforcing and rewarding effects of stimulants. We have previously shown that the opioid antagonist naltrexone (NTX) attenuates several of the effects of amphetamine in rodents. In addition we have demonstrated in human laboratory studies and a placebo controlled trial that NTX not only attenuates the subjective effects (i.e., high, liking and wanting effects) but also reduces craving and risk of relapse to amphetamine use in amphetamine dependent patients. However the mechanism by which NTX mediates its therapeutic effect in amphetamine dependence is currently unclear.
METHOD
The present study investigated the effect of NTX on amphetamine induced DA release in a) the rat striatum using the technique of microdialysis and b) in the human striatum using the technique of PET with [11C]-raclopride.
RESULTS
In the pre-clinical studies amphetamine caused a dose dependent increase in DA release in the rat as measured by microdialysis. Administration of NTX (3mg/kg) 30 minutes before the acute doses of amphetamine (0.5 and 2.0mg/kg i.p.) did not modulate the amphetamine-induced DA release. However, administration of NTX (3mg/kg) following 10 days of daily administration of amphetamine (2.0 mg/kg) led to a significant reduction in the amphetamine-induced DA release. In healthy humans, an acute dose of amphetamine (0.3mg/kg intravenously) caused strong subjective effects and a decreased binding of [11C]-raclopride in the ventral striatum. Oral administration of NTX (50mg) 1h prior to amphetamine injection, compared to placebo, significantly attenuated the subjective effects induced by amphetamine however without altering the specific binding of raclopride.
CONCLUSIONS
The results provide new evidence regarding the mechanism of action of NTX in amphetamine dependence. In the healthy individual NTX modulated the subjective effects of amphetamine without altering the amphetamine-induced DA release. The engagement of the brain opioid system in amphetamine use appears to be related to neuroadaptations in the reward system in relation to repeated drug use. The therapeutic effects of NTX may thus be more evident in the diseased brain and this is indicative of the potential of NTX as a pharmacotherapy for amphetamine dependence.

**NO. 4**
**THE EFFECTS OF THE MONOAMINE STABILIZER (-)-OSU6162 ON CRAVING IN ALCOHOL DEPENDENT INDIVIDUALS**
*Lead Author: Lotfi Khemiri, M.D.*
*Co-Author(s): Arvid Carlsson, M.D., Ph.D., Johan Franck, M.D., Ph.D., Joar Guterstam, M.D., Nitya Jayaram-Lindström, Ph.D., Pia Steensland, Ph.D.*

**SUMMARY:**
Introduction
Alcohol dependence (AD) is associated with a dysregulated mesolimbocortical dopamine(DA) system, which is involved in reward, craving and cognition. The monoamine stabilizer (-)-OSU6162 (OSU) is a novel compound that either attenuates or stimulates DA function depending on the current DA-ergic tone. We recently showed that OSU decreases alcohol intake, seeking, cue/priming-induced reinstatement and withdrawal symptoms in long-term drinking rats. The aim of the current study was to investigate the effect of OSU on cue- and priming-induced craving in AD patients.
Method

In a double-blind placebo controlled laboratory study, 56 AD subjects received 14 days of OSU or placebo treatment in an outpatient clinic. Baseline drinking was assessed using the TimeLine Follow Back self report (TLFB). Neurocognitive functions were evaluated using the Cambridge Neuropsychological Test Automated Battery (CANTAB®), including the Stop Signal Task as a measure of impulsivity. Drinking, craving and mood were assessed at the weekly follow up visits using the TLFB, Penn Alcohol Craving Scale and the self-reported Montgomery-Asberg Depression Rating Scale (MADRS-S). On Day 15, participants were subjected to a laboratory experiment comprising neutral cues, alcohol cues and an alcohol drink priming session while rating their subjective craving for alcohol using the shortened version of the Desire for Alcohol Questionnaire and a visual analogue scale (VAS). During the priming session, their liking of consumed alcohol was also rated using a VAS.
Results
Post the first sip of alcohol, OSU significantly attenuated craving for alcohol and induced significantly lower subjective "liking" of the consumed alcohol. Also, there was a trend towards significance in the individuals treated with OSU compared to placebo across the cue and priming conditions. Post hoc analysis revealed that the effect of OSU on craving was significant in AD subjects with higher, but not in those with lower levels impulsivity. No effect of OSU treatment compared to placebo was seen on weekly measures of drinking, craving or mood. The OSU treatment was generally well tolerated without any reports of severe side effects.
Conclusion:
OSU treatment attenuates alcohol craving and liking in AD patients in a controlled laboratory experiment, with most pronounced effect in those with higher baseline levels of impulsivity. The current promising findings merit a larger placebo controlled trial to investigate the safety and efficacy of OSU on impulsivity, craving and relapse to drinking.

**NO. 5**

**ANABOLIC ANDROGENIC STEROIDS AND VIOLENT OFFENDING: CONFOUNDING BY POLYSUBSTANCE ABUSE AMONG 10,365 GENERAL POPULATION MEN**

*Lead Author: Lena Lundholm, Ph.D.*
*Co-Author(s): Thomas Frisell Ph.D, Paul Lichtenstein Ph.D, Niklas Långström M.D., Ph.D*

**SUMMARY:**

Introduction:
Anabolic androgenic steroid (AAS) use is associated with aggressive and violent behavior, but it remains uncertain if this relationship is causal in humans. We examined the link between AAS use and violent crime in a non-selected general population sample while controlling for polysubstance abuse and additional suggested risk factors for violence.
Hypothesis:
The relatively strong association of AAS use and interpersonal violence found previously might be better explained by other violence risk factors including substance abuse.
Method:
All Swedish-born male twins aged 20-47 years were invited to participate in a 2005 survey (response rate=60%, N=10,365). The prevalence of AAS use and violent crime among women were both too low to motivate their inclusion. Self-reported use of AAS, alcohol and other substances, ADHD and personality disorder symptoms were linked to nationwide longitudinal register information on criminal convictions, intelligence (IQ), psychological functioning and childhood socioeconomic status.
Results
Any lifetime AAS use was strongly associated with violent offending (2.7% vs. 0.6% in offenders and non-offenders, respectively; OR [odds ratio]=5.0, 95% CI 2.7-9.3). The risk declined when controlling for individual risk factors ADHD, personality disorder symptoms, IQ, psychological functioning, and childhood socioeconomic status in a multivariate model (3.1, 1.6-6.2). Further, the link was substantially reduced and non-significant when controlling for other substance abuse (1.6, 0.8-3.3). However, none of the measured confounders contributed to additional change following adjustment for co-occurring substance abuse (OR=1.3, 95% CI 0.6-2.9).
Conclusion:
In this general population-based, cross-sectional sample, co-occurring polysubstance abuse explained most of the relatively strong association of AAS use and interpersonal violence.
Discussion:
This is, to our knowledge, the first large general population study of the relation between AAS use and violent offending that used a combination of self-report and registry measures of potential confounders. The results supports that AAS use in the general population occurs as a component of a polysubstance abuse pattern, but argues against its purported role as a primary risk factor for interpersonal violence. These findings suggest that assessment and treatment of individual violence risk should consider overall substance use patterns rather than use of AAS in isolation.

**NO. 6**

**OUTPATIENT XR-NTXINDUCTION IN PATIENTS WITH OPIOID USE DISORDERS: NALTREXONE DOSE, WITHDRAWAL SEVERITY AND TREATMENT OUTCOME**

*Lead Author: Paolo Mannelli, M.D.*
*Co-Author(s): Kathleen S. Peindl, Ph.D., Li-Tzy Wu, Sc.D.*

**SUMMARY:**

INTRODUCTION
The prospect of triggering intense withdrawal discomfort limits naltrexone acceptability and effectiveness in the management of opiod use disorders, and justifies further research on different ways of delivering treatment. We examined the effects of 2 different oral naltrexone protocols of induction to XR-NTX injection among opioid using patients.
METHODS
Twenty-four treatment seeking opioid addicted individuals were given daily increasing doses of naltrexone starting at 0.25 mg (schedule A) or 0.5 mg (schedule B), with decreasing doses of buprenorphine starting at 4 mg during a 7-day outpatient XR-NTX induction procedure. Withdrawal discomfort and adverse events were assessed daily until the XR-NTX injection.
RESULTS
Patients receiving schedule B naltrexone (N=15) showed higher treatment completion rates (p= 0.03) and were more likely to report reduced withdrawal intensity following buprenorphine discontinuation (D4, p=0.001), compared with patients receiving the schedule A treatment (n=9). No significant demographic, drug use, and clinical baseline differences were detected

between groups. The administration of lower oral naltrexone doses (range 2 mg-6 mg) was associated with reduced withdrawal discomfort after buprenorphine discontinuation (D4, p=0.04). The use of 20 to 30 mg of oral naltrexone (range 13 mg-50 mg) in the day before XR-NTX injection was associated with less pronounced opioid withdrawal symptoms following the injection (p=0.03).
CONCLUSIONS
Outpatient transition to XR-NTX may be facilitated combining upward titration of very low dose naltrexone with downward titration of low dose buprenorphine. Further studies are needed to confirm the efficacy of this approach and investigate individualized treatment protocols.
Funding and XR-NTX injections were provided through an Investigator-Initiated Trial Grant from Alkermes, Inc.

**NO. 7**

**THE GENETICS OF BINGE DRINKING: A SYSTEMATIC REVIEW**

*Lead Author: Matthew E. Sloan, M.D.*
*Co-Author(s): Joshua Ejdelman, M.Sc., Nancy C. Low, M.D., M.Sc.*

**SUMMARY:**

Introduction:
Binge drinking continues to be a problem in American youth with a prevalence that is highest amongst adult males age 21-25 years old. Binge drinking is associated with a number of negative outcomes including cardiac disease, pancreatic cancer, and mortality. Although alcohol dependence has been shown to be highly heritable, studies examining the genetic determinants of binge drinking have yet to be reviewed systematically.
Methods:
An extensive keyword literature search was developed for each database with the help of a librarian. MEDLINE, Embase, and PsycINFO were searched from their inception until September 2013. This search yielded 525 citations. Abstracts were assessed independently and in duplicate. Genome-wide association studies, candidate gene studies, and linkage studies conducted in humans were included in the review.
Results:
Genetic studies have found that polymorphisms in ALDH1B, ALDH2, DRD4, SLC6A4, CRHR1, and PER1 are associated with increased binge drinking. These studies were generally limited by small sample sizes and other methodological weaknesses.
Conclusion:
Polymorphisms in genes associated with alcohol metabolism, novelty seeking, mood regulation, stress response, and circadian rhythm regulation are associated with binge drinking. A consensus regarding the definition of binge drinking would improve the quality and comparability across studies. Future studies should look for additional genetic determinants and seek to further elucidate the molecular and psychological mechanisms by which known polymorphisms confer increased risk.

**NO. 8**

**PREGABALIN TREATMENT IN PATHOLOGICAL GAMBLING: A PRELIMINARY STUDY**

*Lead Author: Roberta Testa*
*Co-Author(s): Mauro Pettorruso M.D., Marco Di Nicola M.D., Giovanni Martinotti M.D., Mariapia Di Paolo M.D., Andrea Di Cesare M.D., Stefania Chiappini M.D., Gianluigi Conte M.D., Luigi Janiri M.D.*

**SUMMARY:**

Introduction
Pathological Gambling (PG) is a behavioural addiction that involves persistent and maladaptive behaviours which leads to adverse consequences for the gambler or others. Similarly with substance addiction, it shows craving and withdrawal symptoms.
Pregabalin binds alfa-2-delta subunit of calcium channels in the Central Nervous System and acts as a presynaptic modulator of several excitatory neurotransmitters' release. Its clinical use in the treatment of anxiety disorders, benzodiazepines' dependence and alcohol addiction showed encouraging results. Previous studies reported PG cases treated with Pregabalin. The aim of this study is to evaluate safety and efficacy of Pregabalin in the treatment of PG.
Methods
In the study were enrolled 15 patients fulfilling criteria for PG. Exclusion criteria were the following: major mental disorders (such as schizophrenia and bipolar disorder); active drug/alcohol addiction; the inability to provide a valid informed consent. Patients were recruited in the Psychiatric Day Hospital Service of "A. Gemelli" General Hospital during the period March 2012-March 2013. All patients underwent a psychiatric examination where they were diagnosed as pathological gamblers. Impulsive personality traits were evaluated by the Barratt Impulsiveness Scale, while the severity of symptoms by the Gambling-Symptoms Assessment Scale (G-SAS). After the first Pregabalin administration (T0), patients were monitored each week (T1, T2, T3). During the follow up were recorded any relapses in gambling and any symptoms revealed by the G-SAS. Moreover, after the psychiatric examination, patients started a rehabilitation treatment based on Minnesota model.
Results
The treatment was performed by administering a flexible dose of Pregabalin, considering its tolerability and the clinical response of patients. Pregabalin was titrated during the first two weeks until the achievement of a mean dose of 140 ± 62,53 (mg). The mean number of relapses in gambling among all patients was 1,26 ± 1,27. At the end of the treatment, 11 patients (73%) were considered as "responders", as reported a reduction in the scale of G-SAS scores> 40% compared to baseline values.
Discussion
Data support the clinical utility of Pregabalin in the treatment of PG. In the study sample the reduction of G-SAS scores >40% (indicative of a reduction of the PG symptoms) was found in 73% of patients. Were not reported side effects such as to cause the cessation of therapy.
Preliminary results of our open-label study confirm previous cases of glutamatergic treatment of PG and support the involvement of several neurotransmitters systems in the physiopathology of PG, as suggested before.
Further studies are required to define the role of GABAergic and glutamatergic transmission in the development and the maintenance of the PG. Moreover, studies with larger samples, made with randomized and placebo-controlled trials, are needed.

**NO. 9**

**BIOLOGICAL RHYTHM PROBLEMS IN ADULTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER**

*Lead Author: Umut M. Aksoy*
*Co-Author(s): Direnc Sakarya, Sennur Günay Aksoy, Aysegül Sakarya*

**SUMMARY:**

Background & Aims
Biological rhythms maintain the equilibrium between the endogenous timing system and the external environment. It is a broad construct comprising sleep pattern, activity level, eating pattern, social rhythm and the dominant chronotype. While circadian rhythm disorders have been studied in patients with attention deficit hyperactivity disorder (ADHD), most have only focused on a specific sleep problem. In this study, we aimed to assess the biological rhythms of the patients with ADHD.
Methods:
Adult patients with ADHD and healthy controls completed a biological rhythm questionnaire. The patients (n=50, %26 female) were between 17 and 42 years old (M=27.76 SD:6.80) and the controls (n=53, %56.6 female) were between 18 and 63 years old (M=31.39 SD:8.12). We compared the mean scores of the patients with that of controls in the following domains: total biological rhythm disturbance, sleep patterns-social rhythm, eating patterns and activity levels.
Results:
In terms of biologic rhythms; adult ADHD patients scored higher on total scores (t=8.75, p<0.001), eating patterns (t=2.55, p<0.001), sleep patterns-social rhythm (t=3.41, p=0.001) and activity levels (t=3.0, p<0.001).
Conclusion & References:
For adults with ADHD, impairments in biological rhythm seems to be an unequivocal finding. This association should be clarified further.

**NO. 10**

**META-ANALYSIS OF SUICIDE-RELATED EVENTS IN PEDIATRIC AND ADULT PATIENTS TREATED WITH ATOMOXETINE AND COMPARISON OF SEARCH METHODS**

*Lead Author: Mark Bangs, M.D.*
*Co-Author(s): Linda A. Wietecha, B.S.N., M.S., Shufang Wang, Ph.D., Andrew S. Buchanan, B.S. Pharm., Douglas K. Kelsey, M.D*

**SUMMARY:**

Objective: Suicide-related events were identified by text-string search (TXS) or rating scale suicide-related items from double-blind, placebo-controlled atomoxetine trials in pediatric and adult patients with attention-deficit/hyperactivity disorder. Methods: Potential suicide-related events, categorized by United States Food and Drug Administration (FDA) defined codes, were identified using a TXS of the adverse events database from 32 trials (1998 to 2011) that included 3883 pediatric (n=23) and 3365 adult (n=9) patients and Mantel-Haenszel risk ratios (RR) were calculated. In a subset of studies, suicide-related questions from the Columbia Suicide Severity Rating Scale (C-SSRS; 1 pediatric [n=201]; 2 adult [n=824]), the Child Depression Rating Scale (CDRS; 5 [n=1022]), or the Hamilton Montgomery Depression scale (HAMD; 4 adult [n=1074]) were mapped to FDA codes for suicidal behavior and ideation for descriptive comparison to TXS. Results: No completed suicides were reported in the pediatric or adult populations of either treatment group. With TXS, 1 pediatric suicide attempt was reported in the atomoxetine group. The frequency of suicidal behavior or ideation combined in the atomoxetine group (0.37%) compared with placebo (0.07%) was not statistically significant (RR 1.57; 95% confidence interval [CI] 0.526, 4.713; p=0.42). Suicidal ideation accounted for all but 1 event. From the subset of pediatric studies, no suicidal behavior was reported for either treatment group on the C-SSRS or CDRS, whereas 1 event was reported with the TXS. Frequency of suicidal ideation events in the atomoxetine and placebo groups on the C-SSRS (4.35% vs 2.32%) or CDRS (≤5.10% vs ≤5.10%) were not statistically significantly different. Text-string search identified 1 suicidal ideation event (atomoxetine) from the subset of pediatric studies. Overall in adults, with the TXS, the frequency of suicidal behavior or ideation combined was 0.11% with atomoxetine and 0.12% with placebo (RR 0.96; 95% CI 0.194, 4.738; p=0.96). From the subset of adult studies, suicidal behavior was not reported for either group on the HAMD or in the TXS, and was not significantly different between groups on the C-SSRS (<1% each group). Suicidal ideation events were similar between atomoxetine and placebo groups on the HAMD (0% vs ≤1%) and C-SSRS (≤1.4% each group); the TXS had 1 suicidal ideation event (placebo). Conclusions: Overall, in the dataset evaluated, no completed suicide and 1 pediatric suicide attempt was reported. Suicidal ideation was uncommon among pediatrics and adults; however, it was reported more frequently in pediatric patients treated with atomoxetine compared with placebo though the difference was not statistically significant. Although limited by a small subset of studies, the frequency of suicidal behavior or ideation identified by the C-SSRS, HAMD, and CDRS tended to be more sensitive than the TXS, presumably due to the targeted scope of the scales.

**NO. 11**

**MILD TRAUMATIC BRAIN INJURY AND ATTENTION-DEFICIT-HYPERACTIVITY DISORDER: A SYSTEMATIC REVIEW OF THE LITERATURE AND META-ANALYSIS**

*Lead Author: Joseph Biederman, M.D.*
*Co-Author(s): Bamidele O. Adeyemo, M.D., Stephen V. Faraone, Ph.D., Ross Zafonte, D.O.*

**SUMMARY:**

The main aim of the present study was to investigate the association between mild traumatic brain injury (mTBI) and Attention-Deficit Hyperactivity Disorder (ADHD), which increases the risk for injuries and accidents. We conducted a systematic review and meta-analysis of studies that examined the relationship between mTBI and ADHD. Our search identified five studies that fit our a priori inclusion and exclusion criteria. These studies had a total of 3023 mTBI patients and 9716 controls. A meta-analysis of all these studies found a significant association between ADHD and mTBI. This association was significant when limited to studies that reported on ADHD subsequent to mTBI, but not for studies that reported mTBI subsequent to ADHD. The association was also significant for studies that did not specify the direction of the association. There was no evidence for heterogeneity of effect size or publication bias. The available literature documents a significant association between TBI and ADHD. Further clarifications of the relationship and the direction of effect between mTBI and ADHD and its implications for treatment could have large clinical, scientific and public

health implications.

**NO. 12**

**ASSOCIATION ANALYSIS OF ADHD AND SNAP-25 GENE IN A SAMPLE OF SPANIARD CHILDREN AND ADOLESCENTS**

*Lead Author: Juan J. Carballo, M.D., Ph.D.*
*Co-Author(s): Carmen Ayuso, M.D., Ph.D., Enrique Baca-Garcia, M.D. Ph.D., Clara I. Gomez, Ph.D., Rebeca Losada, M.D., Maria Prado, M.D., Rosa Riveiro-Alvarez, Ph.D., Maria Rodrigo, M.D., Alberto Segura, M.D., Victor Soto, M.D., Pilar Tirado, M.D.*

**SUMMARY:**

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common childhood psychiatric disorders. ADHD is characterized by persistent inattention and/or hyperactivity-impulsivity on a more frequent or severe scale than that expected at a particular level of development, and adversely affecting at least two areas of life in terms of social, academic or occupational functioning. Genetic factors may contribute to the underlying liability to develop ADHD. The majority of candidate genes evaluated for ADHD are involved in neurotransmission mediated by biogenic amines. Nevertheless, several lines of evidence suggest a role for SNAP-25 (synaptosomal-associated protein of 25 kDa), a presynaptic plasma membrane protein with an integral role in synaptic transmission, in the genetic etiology of ADHD. A mouse model called the “Coloboma Mutant Mouse” show the effects of deficiency of SNAP-25 in mice (locomotor hyperactivity and learning difficulties). Association of SNAP-25 with ADHD has been determined in numerous studies in humans.

METHODS

329 children and adolescents (6-17 years old) diagnosed with ADHD according to DSM-IV-TR, were recruited from Child and Adolescent Psychiatry Clinics and from Neuropediatric Clinics of three medical centers (Fundacion Jimenez Diaz University Hospital, Rey Juan Carlos I University Hospital and Infanta Elena University Hospital) (Madrid, Spain) from November 1st 2011 to June 30th 2012. Subjects were evaluated over the following scales: ADHD Rating Scale-IV (ADHD RS-IV), Family Apgar Questionnaire, Parents-Rated Strengths and Difficulties Questionnaire (SDQ), Children´s Depression Inventory (CDI), Children´s Global Assessment Scale (CGAS) and Clinical Global Impression (CGI). Demographic data, developmental features, medical and psychiatric history, family history, and treatment histories were obtained by a semi-structured interview.

Patients were genotyped for the gene that codes for SNAP-25 (SNAP-25: rs3746544). Using chi-squared test, genotypic and allelic frequencies were assessed and further compared to data obtained from control population of children and adolescents in which ADHD symptoms were specifically excluded. A Chi-square test was used to test deviation of the genotype counts from Hardy–Weinberg.

RESULTS

The genotype distributions were in Hardy-Weinberg equilibrium ($p>0.05$). The percentages of SNAP-25 gene polymorphisms were distributed different between ADHD subjects and normal controls. Genotypic and allelic analysis showed a trend for a statistically significant association ($\chi2=4.87$, d.f.=2, $p=0.08$; $\chi2=3.66$, d.f.=1, $p=0.05$, respectively).

CONCLUSIONS

Our results provide partial support to previous findings reporting an association of SNAP-25 with ADHD. Since other investigators reported that SNAP-25 gene only lead to a clinical diagnosis of ADHD in the presence of other genetic factors, future studies exploring other candidate genes concurrently are needed.

**NO. 13**

**ADHD CHILDREN’S EMOTION REGULATION IN FACE©-PERSPECTIVE (FACILITATING ADJUSTMENT OF COGNITION AND EMOTION)**

*Lead Author: Smadar Celestin-Westreich, Ph.D.*
*Co-Author(s): Leon-Patrice Celestin, M.D., Hospital Practitioner, Paris, Centre F.A.C..E. & University of Brussels, Hospital Erasmus Le Lothier*

**SUMMARY:**

Background: Children with ADHD are increasingly acknowledged to experience core emotional issues, besides more widely recognized attention and impulsivity problems. Relatively few empirical studies yet address specific emotion regulation components in ADHD children.

Aims: As part of the FACE©-ADHD program (Facilitating Adjustment of Cognition and Emotion), this research investigates emotion regulation components in children with ADHD as potential underlying processes of their problem behavior.

Methods: Operationalizing the FACE©-model, this study examined children with ADHD and matched non-referred controls (N=88, aged 7 to 12, 82% boys) on components of their emotional and cognitive functioning, as well as on behavioral outcomes. More specifically, children with and without ADHD were investigated regarding basic facial emotion recognition, emotion recognition in context, and Theory-of-Mind. Children were also assessed on parent- and teacher-reported problem behavior (Achenbach CBCL/TRF/YSR), self-reported overall functioning (FACE© Global Evaluation Scale) and fear (Fear Survey Schedule for Children-Revised).

Results: Children with ADHD expectedly displayed more adult-reported overall, internalizing and externalizing problems than controls. ADHD children further expressed positively experienced overall functioning comparable to that of controls, except for lower school competence and less self-reported fear of failure and criticism. Children with ADHD and comorbid autism spectrum symptoms (ASS) displayed significantly more difficulties than controls to recognize facial expressions ($p=0,016$). Children with ADHD without comorbid ASS yet with learning and behavior problems were significantly less competent in recognizing and modulating emotions in context ($p<0,001$). Theory-Of-Mind was also less developed in ADHD children than in controls and this was associated with their problem behavior.

Conclusions: Our data suggest that children with ADHD varyingly experience difficulties in distinct components of the emotion regulation process, depending, amongst others, on type of comorbidity. ADHD children’s prominent difficulties with the Theory-of-Mind emotion regulation component may contribute to their problem behavior and positive illusory bias. Intervention implications are discussed as experienced with the FACE©-program.

**NO. 14**

**TEMPERAMENT AND CHARACTER IN TWIN-PAIRS DIAGNOSED WITH ADHD AND ASD**

*Lead Author: Danilo Garcia*
*Co-Author(s): C. Robert Cloninger, M.D., Henrik Anckarsäter, M.D.*

**SUMMARY:**
Background: Cloninger's model of personality comprises four temperament (Novelty Seeking, Harm Avoidance, Reward Dependence, and Persistence) and three character dimensions (Self-directedness, Cooperativeness, and Self-transcendence). These dimensions are associated to attention deficit/hyperactivity disorder (ADHD) and autism spectrum disorders (ASD). Specific combinations of temperament dimensions are associated to each disorder, while Self-directedness and Cooperativeness are negatively related to both types of disorders. Nevertheless, low levels of autonomy, responsibility, and self-control (i.e., Self-directedness) and low levels of helpful behavior, empathy, and care for others (i.e., Cooperativeness) might as well be epiphenomena of the disorder. We used a twin-pair method to (1) examine the familiality of the seven personality dimensions, and (2) whether this could be related to the genetic vulnerability to develop ADHD and/or ASD.
Method: Probands diagnosed with either ADHD (n = 74) or ASD (n = 21) (D-probands) and their co-twins (D-cotwin) were identified from the Child and Adolescent Twin Study in Sweden. The controls (C-probands) and their co-twins (C-cotwin) were 729 twin-pairs who do not reach diagnosis criteria. We used Pearson correlations between twins to analyze the relationship between personality dimensions among twin-pairs. By examining D-cotwins and C-cotwins who do not reach diagnosis criteria we disentangled a genetic relationship between personality traits and the disorder–the co-twin of twins diagnosed with a disorder who do not reach diagnosis criteria themselves, yet share at least 50% of their genes with the disordered twin, should differ in the character measures when compared with the non-diagnosed co-twins of healthy controls. Although the non-diagnosed D-cotwins did not express the phenotype for ADHD, they should have more ADHD vulnerability genes than individuals with no relation to a D-proband (i.e., C-cotwins).
Results: All seven personality dimensions were significantly correlated across twin-pairs with coefficients ranging from .30 for Novelty Seeking to .51 for Cooperativeness. The non-diagnosed C-cotwins reported higher Self-directedness (t=2.96, df=737, p=.003) and lower Self-transcendence (t=-2.35, df=737, p=.019) than the non-diagnosed D-cotwins. The mean scores of the non-diagnosed D-cotwins for these character traits were between those of the D-probands and the non-diagnosed C-cotwins. Suggesting that, at least these two scales, have trait-like characteristics related to familial vulnerability to ADHD. Self-directedness goes down, while Self-transcendence goes up in individuals diagnosed with ADHD.
Conclusions: There is a weak/moderate effect size for Self-directedness and Self-transcendence in causation of ADHD and ASD. The combination of low Self-directedness and high Self-transcendence, for instance, predisposes to magical thinking in that imagination is not constrained by reality testing.

**NO. 15**
**LONG-TERM EFFICACY OF MPH-LA BY GENDER AND AGE SUBGROUPS IN ADULTS WITH CHILDHOOD ONSET ADHD**

*Lead Author: Ylva Ginsberg, M.D., Ph.D.*
*Co-Author(s): Torben Arngrim, M.D., Chien-Wei Chen, Ph.D., Preetam Gandhi, M.D., Michael Huss, M.D., Ph.D., Vinod Kumar, M.D., Alexandra Philipsen, M.D., Torbjorn Tvedten, M.D.*

**SUMMARY:**
Introduction
MPH-LA treatment has been well-examined in children with ADHD. However, there is limited data in adults. A previous 40-week, randomized, double-blind placebo-controlled core study comprising 3 phases (9-week dose confirmation phase, 5-week real-life dose optimization phase and 6-month maintenance of effect phase) reported that MPH-LA (40-80 mg/day) in adults with childhood onset ADHD, controlled ADHD symptoms as well as reduced functional impairment, with a good tolerability profile. Here, we report the long-term efficacy from a 26-week open label extension phase of the same study analyzed by gender and age groups.
Methods
All patients (138 women, 160 men) entering the extension phase were initiated on treatment with MPH-LA (20 mg/day) that was up-titrated in increments of 20 mg/week to reach individual patient's optimal daily dose of 40, 60 or 80 mg. Efficacy of MPH-LA in the age groups of 18-30 (n=107), 31-40 (n=62), 41-50 (n=99) and 51-60 (n=30) years and gender was determined by mean change in DSM-IV ADHD rating scale (RS) and SDS total scores at the end of extension study from maintenance of effect baseline and extension phase baseline.
Results
Mean change in DSM-IV ADHD RS total scores at the end of extension study from maintenance of effect baseline and extension phase baseline, respectively, for the various age subgroups were: 18-30yr (-1.0, -6.7); 31-40yr (-0.7, -6.2); 41-50yr (-0.3, -7.7); 51-60yr (-2.6, -9.1). Similarly, the mean change at the end of extension study in SDS total scores for the age subgroups were in the range of -1.0 to -2.1 from maintenance of effect baseline and in the range of -4.6 to -5.9 from extension phase baseline. At the end of the extension study, mean change in DSM-IV ADHD RS total scores from maintenance of effect baseline and extension phase baseline for males were -1.1 and -5.8; and females were -0.6 and -8.7, respectively. Likewise change at the end of extension study for SDS scores were -2.0 and -4.6 for males and -0.7 and -5.0 for females from maintenance of effect baseline and extension phase baseline, respectively. Overall MPH-LA was well tolerated.
Conclusions
In adults with childhood onset ADHD, long-term efficacy of MPH-LA was maintained regardless of age and gender, and was similar to the results of the overall group reported earlier.

**NO. 16**
**LONG-TERM SAFETY AND EFFICACY ASSESSMENT OF THE TREATMENT WITH MPH-LA IN ADULT PATIENTS WITH ADHD**

*Lead Author: Michael Huss, M.D., Ph.D.*
*Co-Author(s): Torben Arngrim, M.D., Chien-Wei Chen, Ph.D., Preetam Gandhi, M.D., Ylva Ginsberg, M.D., Ph.D., Vinod Kumar, M.D., Alexandra Philipsen, M.D., Torbjorn Tvedten, M.D.*

**SUMMARY:**
Introduction
A previous 40-week, randomized, double-blind placebo-controlled core study comprising 3 phases (9-week dose confirmation phase, 5-week real-life dose optimization phase and

6-month maintenance of effect phase) reported that MPH-LA (40-80 mg/day) in adults with childhood onset ADHD, controlled ADHD symptoms as well as reduced functional impairment, with a good tolerability profile. Here, we report the long-term efficacy and safety from the 26-week open label extension phase of the same study.
Methods
All patients entering the extension phase (n=298) were initiated on treatment with MPH-LA (20 mg/day) that was up-titrated in increments of 20 mg/week to reach the individual patient's optimal daily dose of 40, 60 or 80 mg. Adverse events (AEs) and serious adverse events (SAEs) were monitored (a) from maintenance of effect phase baseline to the end of extension phase (12 months) and (b) from extension phase baseline to the end of extension phase (6 months). Efficacy was determined by the mean change in DSM-IV ADHD rating scale (RS) and SDS total scores at the end of extension study from maintenance of effect phase baseline and extension phase baseline.
Results
Overall incidence of AEs occurring from maintenance of effect phase baseline until the end of extension phase was 80.5% and occurring anytime within the extension phase was 69.8%. Incidences of SAEs reported during both timelines were similar (0.7%). Most common AEs were nasopharyngitis, headache, decreased appetite, dry mouth and nausea. No deaths were reported. No new or unexpected results were observed for laboratory findings, vital signs or ECGs. None of the patients had QT, QTcB or QTcF ≥500ms during the study. At the end of the extension phase, the mean change in DSM-IV ADHD RS and SDS total scores from maintenance of effect baseline was -0.9 and -1.4 points respectively; and from extension phase baseline was -7.2 and -4.8 respectively.
Conclusions
In adult patients with childhood onset ADHD, use of MPH-LA over a year, continued to be well-tolerated and its clinical efficacy was maintained.

**NO. 17**

**NOREPINEPHRINE GENES PREDICT RESPONSE TIME VARIABILITY AND METHYLPHENIDATE-INDUCED CHANGES IN NEUROPSYCHOLOGICAL FUNCTION IN ATTENTION-DEFICIT-HYPE**

*Lead Author: Bung-Nyun Kim M.D., Ph.D, M.D., Ph.D.*
*Co-Author(s): Jae-Won Kim, MD, PhD, Tarrant D.R. Cummins, PhD, Mark A. Bellgrove, PhD,Þ Ziarih Hawi, PhD,Þ Soon-Beom Hong, MD, PhD, Young-Hui Yang, MD, Hyo-Jin Kim, MD,* Min-Sup Shin, PhD, Soo-Churl Cho, MD, PhD,*

**SUMMARY:**
Noradrenergic dysfunction may be associated with cognitive impairments in attention-deficit/hyperactivity disorder (ADHD), including increased response time variability, which has been proposed
as a leading endophenotype for ADHD. The aim of this study was to
examine the relationship between polymorphisms in the >-2A-adrenergic
receptor (ADRA2A) and norepinephrine transporter (SLC6A2) genes and
attentional performance in ADHD children before and after pharmacological
treatment.
One hundred one medication-naive ADHD children were included. All
subjects were administered methylphenidate (MPH)YOROS for 12 weeks.
The subjects underwent a computerized comprehensive attention test to
measure the response time variability at baseline before MPH treatment
and after 12 weeks. Additive regression analyses controlling for ADHD
symptom severity, age, sex, IQ, and final dose of MPH examined the association
between response time variability on the comprehensive attention
test measures and allelic variations in single-nucleotide polymorphisms of
the ADRA2A and SLC6A2 before and after MPH treatment.
Increasing possession of an A allele at the G1287A polymorphism of
SLC6A2 was significantly related to heightened response time variability at
baseline in the sustained (P = 2.0 10j3) and auditory selective attention
(P = 1.0 10j3) tasks. Response time variability at baseline increased
additively with possession of the T allele at the DraI polymorphism
of the ADRA2A gene in the auditory selective attention task (P = 2.0
10j3). After medication, increasing possession of a G allele at the
MspI polymorphism of the ADRA2A gene was associated with increased
MPH-related change in response time variability in the flanker task
(P = 1.0 10j3).
Our study suggested an association between norepinephrine gene
variants and response time variability measured at baseline and after
MPH treatment in children with ADHD. Our results add to a growing
body of evidence, suggesting that response time variability is a viable
endophenotype for ADHD and suggesting its utility as a surrogate end
point for measuring stimulant response in pharmacogenetic studies.

**NO. 18**

**RESEARCH DATABASE FOR QUALITY EVALUATION IN ADULT PATIENTS WITH ADHD**

*Lead Author: Alina Marin, M.D., Ph.D.*
*Co-Author(s): Finch, Susan, M.D.; Mazhar, Nadeem, M.D.*

**SUMMARY:**
Adult ADHD has become a major focus of clinical and scientific concern, mostly because patients with this diagnosis present significant impairment of their overall functioning. Given the complex nature of adult ADHD and its comorbidities, as well as the multi-component structure of the health promotion pro-

grams, database collection is particularly useful for evaluation research and monitoring outcomes from different perspectives. We describe a complex observational approach that takes both clinical and functional outcome parameters into consideration, and relates them to the interventions provided to the patients. The patients received evidence-based therapeutic recommendations in accordance with the most recent practice guidelines. Symptom remission, reduction of impairment, patients' illness perception and their satisfaction with the treatment have been assessed in a standardized way. Statistical analysis has helped monitor factors impacting on recovery and thus has enabled us to identify ways to improve our interventions. The results of outcome evaluation at 3 months and 6 months are presented.

**NO. 19**

**PHARMACOLOGICAL TREATMENT RATE OF ADHD: USING NATIONAL INSURANCE DATA FROM 2007 TO 2011 IN KOREA**

*Lead Author: Chanmin Park, M.D.*
*Co-Author(s): Minha Hon1, Bongseog Kim, Duk-Soo Moon, Soo-Young Bhang, Seok Han Sohn, In-Hwan Oh, Soyoung Irene Lee, Yeon Jung Lee, Un-Sun Chung, Yoo-Sook Joung, Hyung-yun Choi, Jun-Won Hwang, Young Sook Kwack, Geon Ho Bahn.*

**SUMMARY:**

Introduction

ADHD is one of the most frequently diagnosed psychiatric disorders with an average worldwide prevalence of 5.3% in children, recognized as a life-long condition with a substantial effect on the quality of life. Although some Taiwanese data has been reported, there are few studies on the incidence and treatment rate of ADHD in Korea. We intend to investigate the current status of ADHD diagnosis and treatment rate and related factors in Korea, based on the National Health Insurance date from 2007 to 2011.

Method

Based on the insurance claim data from the National Health Insurance from January 1st, 2007 to December 31st, 2011, the inclusion criteria were as follows: (1) Age ranging from 6-18, (2) those with 1 or more claims by the code F90.0 from the ICD-10 (international classification of disease, 10th revision), (3) those who had no claims for the past 1 year. Subjects who met all three of the criteria were included.

Results

The number of subjects diagnosed as ADHD from 2008 to 2011, age ranging from 6 to 18 years old, was 29,687, 30,043, 28,436, 29,076 each year, with the total number of 117,242. Except for the 7-9 years old group with a significant decrease from 2008 to 2011, there was no significant difference in all age and gender groups.

The number of patients who were diagnosed as ADHD and treated with medication, from 2008 to 2011, was 17,472, 22,213, 20,325, 21,351 each year, with the total number of 81,361. There was a significant increase in the 6 year old group. Among the first prescribed medication, atomoxetine significantly increased.

From 2008 to 2011, the average diagnostic incidence rate was 0.357% and the average treatment incidence rate was 0.248%.

Discussion

By analyzing the National Health Insurance data in Korea, we could verify that ADHD diagnosis and treatment incidence is still low. In order to increase adherence rates and treatment compliance, future studies investigating related factors is necessary.

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**NO. 20**

**THE EFFECTS OF ADHD PHARMACOLOGIC TREATMENTS ON ADULT ADHD SUB-TYPES WITH AN EXAMINATION OF THE EFFECTS OF MG01CI ON ADULT SUBJECTS WITH PI-ADHD**

*Lead Author: Jonathan Rubin, M.D.*
*Co-Author(s): Lenard A. Adler, MD, Yaron Daniely, PhD, MBA, Iris Manor, MD*

**SUMMARY:**

Studies of stimulants and non-stimulants have generally found similar effects in adult subjects with the Predominantly Inattentive ADHD (PI-ADHD) and Combined ADHD (CT-ADHD) subtypes.

MG01CI, a non-stimulant, is an extended release formulation of metadoxine in clinical development for the treatment of adults with Attention Deficit Hyperactivity Disorder (ADHD). A Phase II double blind placebo-controlled 6 week study with 1400 mg MG01CI in 120 adult ADHD subjects demonstrated significant improvement in ADHD symptoms compared to placebo in all subjects, and suggested a preferential response in subjects with the PI-ADHD subtype.

To further explore the effects of MG01CI on the adult PI-ADHD subtype, a randomized, double-blind, placebo-controlled, cross-over single center study was conducted in 36 adult subjects with PI-ADHD. Eligible subjects were randomly assigned in a 1:1:1 ratio to one of three treatment sequences that varied the order of investigational product administration. In each treatment sequence, subjects received a single administration, approximately one week apart, of MG01CI 1400 mg, MG01CI 700 mg and placebo. Subjects received a dose of investigational product one week after randomization, and then a dose two weeks and three weeks after randomization. The study consisted of a screening period, a baseline period, followed by the three week crossover, and then a one week follow-up after the end of treatment.

Study subjects included adult men and women, 18 to 55 years old, diagnosed with PI-ADHD based on Diagnostic Statistical Manual IV (DSM-IV) criteria with a Clinical Global Improvement-Severity (CGI-S) of 4 or greater and a Test of Variable Attention (TOVA) ADHD score of -1.8 or less at Screening. Subjects with ADHD Combined type, ADHD hyperactive impulsive type, and subjects with any significant medical or psychiatric condition were excluded.

The primary assessment was the TOVA, a continuous performance test. Secondary assessments included TOVA sub-scores and the Cambridge Neuropsychological Automated Test Battery

(CANTAB) total score and sub-scores, measures of cognitive performance. Safety assessments included spontaneous adverse events, discontinuations, and vital signs.
The primary analysis was the mean change in the TOVA ADHD score from Baseline to 3.5 hours post-dose using a paired t-test to compare MG01CI 1400 mg with placebo and MG01CI 700 mg with placebo.
Secondary efficacy outcomes were analyzed in a similar fashion.
Data will be reviewed from previous studies of stimulant and non-stimulants, which found similar efficacy in adult subjects with PI-ADHD and CT-ADHD, as compared to the above noted study of MC01C1 showing preferential effect upon subjects with PI-ADHD. The results from the current cross-over study of the effects MG01CI 1400 mg and 700 mg on various neuropsychological measures of attention and cognition will be presented.

**NO. 21**

**STIMULANTS AND SLEEP OF ADHD YOUTH: DOSE EFFECTS OF EXTENDED RELEASE DEXMETHYLPHENIDATE AND MIXED AMPHETAMINE SALTS**

*Lead Author: Jose Arturo Santisteban, M.B.B.S.*
*Co-Author(s): Reut Gruber, PhD, Mark A. Stein, PhD*

**SUMMARY:**

Introduction. Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by impulsivity, hyperactivity, and inattention, which affects 5-10% of school-age children. The first-line treatments for ADHD are stimulant medications, such as methylphenidate and amphetamine. These medications are highly effective, but not always tolerated. Sleep side effects, such as insomnia, can lead to treatment discontinuation. They are reported for both methylphenidate and amphetamine stimulants and are usually, but not always, mild and transitory. Poor tolerability may limit efficacy by compromising the ability to prescribe optimal doses. Few studies have directly compared dose response effects of long-acting methylphenidate and amphetamine formulations in youth with ADHD, and it is unclear if there are differential effects of drug and/or dose on sleep. MAS increase norepinephrine (NE) and dopamine (DA) levels release as well as reupticate, in contrast to d-MPH, and hence could affect sleep differently.
Objectives. We sought to determine if there are significant differences in the dose-response effects of ER D-MPH and ER MAS on objective measures of sleep.
Methods. Children, aged 10-17 (n=37), participated in a double-blind crossover study comparing two stimulants (extended release DMPH, MAS) at three doses (10, 20, 30 mg) and placebo. Each treatment session lasted one week, for a total protocol duration of eight weeks. Sleep was assessed in all conditions using actigraphy and sleep questionnaires.
Results. Sleep schedule measures showed a significant effect for dosage on sleep start time ($F(1,36)=6.284$, $p<0.05$), with a significantly later sleep start time when children were on 20mg or 30mg dosages, compared to placebo ($p<0.05$). Sleep duration revealed a significant dose effect on actual sleep duration ($F(1,36)=8.112$, $p<0.05$), with significantly shorter actual sleep duration for subjects receiving 30mg compared to those on placebo ($p<0.05$). There were no significant differences between medications.
Conclusion. Higher stimulant dosages reduce sleep duration and lead to later sleep start times, regardless of medication class.

**NO. 22**

**METHYLPHENIDATE HYDROCHLORIDE EXTENDED RELEASE CAPSULES IN A RANDOMIZED DOUBLE-BLIND STUDY OF CHILDREN AND ADOLESCENTS WITH ADHD**

*Lead Author: Sharon B. Wigal, Ph.D.*
*Co-Author(s): Akwete L. Adjei, Ph.D., Ann Childress, M.D., Weiwei Chang, Ph.D., Robert J. Kupper, Ph.D.*

**SUMMARY:**

Introduction: Although a broad range of pharmacological treatments for symptoms of Attention Deficit Hyperactivity Disorder (ADHD) exists, Biphentin® (methylphenidate hydrochloride extended release capsules) with its novel drug release profile, once- a-day dosing, and multiplicity of strengths offers a novel alternative for the management of ADHD.
Hypothesis: Biphentin's ratio of immediate/extended release (IR/ER) content (37%/63%) is unique among the available controlled release methylphenidate products and may produce a clinically meaningful rapid initial (morning) post-dose effect with a subsequent more prolonged effect across the day.
Methods: A parallel, randomized, double-blind, fixed-dose, placebo-controlled study was conducted at 16 centers to evaluate the safety and efficacy of Biphentin (10, 15, 20, 40 mg/day) in the treatment of ADHD in patients aged 6 to 18 years. There were 4 study phases: 1) 4-week screening/baseline; 2) 1-week, double-blind treatment; 3) 11-week, open-label, dose-optimization period; and 4) 30-day follow-up call. The primary endpoint was change from baseline to the end of phase 2 in ADHD Rating Scale-Fourth Version (ADHD-RS-IV); secondary endpoints included the Clinical Global Impression Scale – Improvement (CGI-I), adverse events (AEs), and quality of life measures. Differences between treatment groups were analyzed by ANCOVA including terms for treatment, investigational site, and baseline ADHD-RS-IV total score as a covariate for the intent-to-treat population.
Results: Children (N=280; mean age 10.8 ± 3.0 years) diagnosed with ADHD (by DSM-IV-TR criteria) were screened, 230 entered the double-blind phase and were administered either 1 of the 4 strengths of Biphentin or placebo (~45 in each treatment group). Two hundred twenty-one (221) completed the 1-week double-blind phase. Biphentin resulted in significantly greater improvement versus placebo in mean ADHD-RS-IV score change ($p < 0.05$) and CGI-Improvement ($p < 0.05$). Clinical significance was seen at each of the four fixed doses used in the study. Two hundred (200) subjects completed the subsequent 11-week open label phase, during which their Biphentin dose was optimized. There was continuing improvement in efficacy over time. Quality of life measures did not statistically improve during the double-blind period but showed significant improvements by study end. The most common AEs were consistent with known AEs for the methylphenidate drug class. Most treatment-emergent AEs were mild or moderate in severity, and there were no serious drug-related AEs throughout the study.
Conclusions: Once-daily Biphentin was significantly more effective than placebo in treating symptoms of ADHD in children 6-18 years. The novel drug release profile mainly due to

Biphentin's unique immediate/extended drug release ratio and up to eight dose strengths provide more options for customized treatment of ADHD.

**NO. 23**

**HIV-INDUCED PSYCHOSIS**

*Lead Author: Swarnalatha R. Yerrapu, M.D.*
*Co-Author(s): JennySaint Aubyn M.D.,Mehr Iqbal M.D.,Ulfat Shazadi M.D.,*

**SUMMARY:**

Objective: HIV induced psychosis
Design: Single case report.
Methods: Retrospective data analysis
Findings: 67 yr old male who diagnosed with HIV 12 yrs ago who is complaint with HIV medications, With good CD 4 count and insignificant viral load, with no opportunistic infections currently presenting with Paranoid delusions and Visual Hallucinations from the past 2 yrs.
Conclusion: HIV can present with psychosis as late complication which can respond well to atypical anti psychotics.Patient was diagnosed with HIV more than 10 yrs ago but currently exhibiting the signs of Psychosis.But pt not exhibiting any opportunistic infections and his CD 4 count is excellent.After ruling out of all the infectious and any space occupying lesions we came to conclusion that this is purely HIV induced psychosis.

**NO. 24**

**COLLAGEN LAXITY IS ALSO ASSOCIATED WITH ANXIETY DISORDERS AFTER 60**

*Lead Author: Antonio Bulbena, M.D., M.Sc., Ph.D.*
*Co-Author(s): Andrea Bulbena-Cabré, M.D, M.Sc., Guillem Pailhez M.D. Ph.D., Carolina Baeza Ph.D, Conxita Rojo M.D., Ph.D., Jaume Fatjó, D.V.M., PhD*

**SUMMARY:**

Background
Joint Laxity (JL), a heritable collagen condition (Ehlers Danlos III) has repeatedly found to be highly associated with anxiety both in cross-sectional and also in follow up studies. Anxiety disorders are very prevalent in later life, tend to compromise quality of life as well as generate substantial costs. Considering that prevention of anxiety might thus be relevant to increase health gains in old age, it would be of great interest to identify whether collagen laxity is also a risk factor associated to anxiety in that age range.
Methods
Cross-sectional data collected in a general population epidemiological study in a rural town have been used to assess the association between collagen laxity and anxiety for those over 60 years old. Instruments applied included Spielberger STAI, a modified Wolpe Fear SS, GHQ-28 and also a semi-structured interview (blind to the collagen status) to assess lifetime and 6-month prevalence of anxiety disorder. Validated examiners assessed Joint Laxity using Beighton's criteria and Hospital del Mar criteria, blind to any psychiatric information.
Results
Among the one hundred and eight subjects (55% females) over sixty years old, twenty three (21,3%) meet criteria for Joint Laxity. These subjects compared with those not meeting JL criteria, scored significantly higher in both State (F= 5.53; p = 0.02) and Trait (F= 4.68; p = 0.03) Anxiety, GHQ 28 (F= 6.29; p = 0.01) and also were found to suffer more anxiety disorders in the lifetime prevalence (F= 5.49; p = 0.02) and in the 6-month prevalence (F= 7.49; p = 0.007) in the semi-structured interview. They also scored higher in the Modified FSS Wolpe, although this did not reach significance (F= 2.12; p = 0.15).
Conclusions
Joint laxity has also been found to be associated to anxiety (both state and trait), and higher GHQ scoring among subjects over 60 in the general population. The estimated prevalence of anxiety disorder has also found higher among subjects meeting JL criteria. These results are consistent with previous research in different populations; to the best of our knowledge, this is the first study of JL and anxiety in subjects over sixty. If replicated in prospective studies, this finding would help to set a new agenda for preventive psychiatry in anxiety on this age range

**NO. 25**

**INTERACTIVE PROCESS OF INTERNAL AND EXTERNAL ATTENTIONAL BIAS IN PATIENTS WITH SOCIAL ANXIETY DISORDER**

*Lead Author: Soo-Hee Choi, M.D., Ph.D.*
*Co-Author(s): Jae-Jin Kim, M.D., Ph. D., Su Young Lee, M.D., Ph. D.*

**SUMMARY:**

In social anxiety disorder, emotional and physiological anxiety reactions are triggered by cognitive distortions that automatically appear in social situations. The present study aimed to elucidate the interactive process of internal and external attentional bias in patients with social anxiety disorder. The modified face-in-the-crowd-effect task was performed by 22 patients with social anxiety disorder and 20 control subjects. Participants were instructed to identify contemptuous faces among angry or happy faces in a crowd in situations with different levels of internal threat (hearing participants' own pulse-sounds versus control-sounds) and external threat (8-person versus 4-person crowds in facial matrices). A 2x2x2 (group x internal factor x external factor) repeated measures ANOVA for accuracy showed a trend level of internal x external interaction effect ($F(d.f.=1,40)=3.93$ $P=0.054$) and significant main effects for the internal ($F(d.f.=1,40)=9.22$, $P=0.004$) and the external ($F(d.f.=1,40)=53.02$, $P<0.001$) factors. The 2x2 repeated measures ANOVA in each group showed a significant internal x external interaction effect only in the patient group. The 2x2x2 repeated measures ANOVA for response times revealed main effects for the internal ($F(d.f.=1,40)=23.07$, $P<0.001$) and the external ($F(d.f.=1,40)=2.57$, $P<0.001$) factors, but no interaction effect. Pulse rates were greater during the task than baseline in patients, but were comparable in controls. The patient group showed better performance when paid attention to their own pulse-sounds than to the control-sounds, especially in the 8-person crowd condition. As previous studies reported that socially anxious individuals had better performance in search capabilities and in emotional recognition during conditions of enhanced social fear due to compensatory strategies, these behavioral results of social anxiety patients imply elevated anxiety combined with interactive processes of internal- and external-focused attention towards social threats. Patients with social anxiety disorder may experience elevated anxiety responses due to interactive processes of internal- and external-focused attention towards social threats.

**NO. 26**

**POST-SHIFT CHANGES IN STRESS HORMONES IN FIREFIGHTERS WITH PTSD SYMPTOMS**

*Lead Author: Kyeong-Sook Choi, M.D., Ph.D.*
*Co-Author(s): Kong Sung-Shoi, M.D., Jeong Kyeong-Sook,M.D.,Ph.D., Anh Yeon-Soon, M.D., Ph.D., Chae Jeong-Ho, M.D., Ph.D.*

**SUMMARY:**

Objectives

Firefighters regularly engage in a range of stressful activities, and they have been known to be at high risk for PTSD. We examined the changes of stress hormone levels(ACTH, Cortisol, Epinephrine, Norepinephrine) in Korean firefighters before and after exposure to work. Our aim was to examine the relationship between stress hormonal responses and PTSD symptoms in firefighters after exposure to acute stress related to work.

Methods

We collected data from a sample of 584 firefighters at urban fire stations, and surveyed the firefighters using self-administered questionnaires and psychometric instruments including the IES-R(Impacted Event Scale-Revised), LEC(Life Event Checklist), PSS(Perceived Stress Scale), BDI(Beck Depression Inventory), KOSS-SF(Korean Occupational Stress Scale-Short From). We measured serum ACTH, cortisol, epinephrine, norepinephrine and salivary cortisol levels of all participants, one time before duty, and one more time immediately after duty and examined the change of stress hormones after exposure to work. Using the IES-R(cutoff score 22), we divided the firefighters into 2 groups : those who showed significant PTSD symptoms(n=37), and those who did not show significant PTSD symptoms(n=188). Measured stress hormones were compared between PTSD and non-PTSD groups.

Results

LEC(p=0.043), PSS(p=0.024), BDI(p=0.002), KOSSB(p=0.019) scores were significantly higher in the group with PTSD symptoms. The group with PTSD symptoms appeared to have a significantly increased plasma NE response(p=0.009) after work. There were no significant differences of plasma ACTH(p=0.558), cortisol(p=0.664), epinephrine(p=0.992) salivary cortisol(p=0.367) levels between the two groups.

Conclusion

Firefighters who showed significant PTSD symptoms showed an increased NE activity after exposure to work stress, compared to those who had no significant PTSD symptoms.

**NO. 27**

**HEART RATE VARIABILITY IN UNAFFECTED CHILDREN AT FAMILIAL RISK FOR ANXIETY**

*Lead Author: Diana Koszycki, Ph.D.*
*Co-Author(s): Jacques Bradwejn, M.D., Robert Gow, M.D., Monica Taljaard, Ph.D.*

**SUMMARY:**

Objective: Heart rate variability (HRV) is a non-invasive measure of cardiac autonomic nervous system activity. Reduced HRV has been observed across the anxiety disorders and may reflect a state or trait marker of anxiety. This study determined whether HRV is a potential heritable trait marker of AD risk.

Method: HRV was measured in 47 unaffected children of AD parents (HR) and 104 children with no parental psychopathology (LR). HRV was measured for 24-hrs and during a laboratory stressor (speech task). Low frequency power (LFP, an index of sympathetic activity) and high frequency power (HFP, an index of parasympathetic activity) were calculated with spectral analysis. Log transformed HRV data were analyzed by linear mixed model analysis.

Results. No significant effects emerged for 24-hr HRV. During the laboratory stressor, a significant group x sex effect was detected for baseline sitting and standing LFP (F=6.31, p=.014 and F=7.25, p=.008), HFP (F=10.09 and F=.76, ps=.002) and the LFP/HFP ratio (F=4.51, p=.04 and F=11.26, p=.001). Compared to LR males, HR males had significantly lower LFP and HFP and a higher LFP/HFP ratio. During the speech task HFP was lower in HR children irrespective of sex (F=4.60, p=.034).

Conclusion. Although 24-hr HRV did not differ between high and low risk children, HR children exhibited altered cardiac autonomic modulation before and during a laboratory stressor. These preliminary data suggest reduced HRV response to a stressor may be a potential heritable marker of AD risk.

**NO. 28**

**PSYCHOLOGICAL FEATURES IN SHY BLADDER SYNDROME**

*Lead Author: Antonio Prunas, Ph.D.*

**SUMMARY:**

Introduction

Paruresis (or “shy bladder syndrome”) is the inability to urinate in situations where there is perception of scrutiny by others (Vythilingum et al., 2002). According to DSM-5 (APA, 2013), paruresis is classified as social anxiety disorder.

In spite of prevalence estimates of 2.8% in the general population (Hammelstein et al., 2005), the disorder is underinvestigated and little is known about psychological variables connected with it.

The present study aims at analysing the psychological profile of a sample of paruretics recruited through an Italian website dedicated to this disorder (www.paruresis.it).

In particular, we explored perfectionism, hypersensitivity to judgement and body image distortions, which have been hypothesized to be key features in the conceptualization of paruresis and social anxiety (Boschen, 2008).

Methods

Data were collected through a set of questionnaires, including screening measures for paruresis (Paruresis Check List, PCL; Hammelstein et al., 2005), and generalized social phobia (MINI-SPIN; Seeley-Wait et al., 2007). In order to assess the variables under investigation we also administered:

- the Hypersensitive Narcissism Scale (HNS; Hendin and Cheek, 1997) in its Italian version (Fossati et al., 2009); the HNS has been shown to assess two independent facets: “Oversensitivity to judgement” and “Egocentrism”;
- the Frost Multidimensional Perfectionism Scale (Frost et al., 1990) composed of five subscales: Concerns over mistakes, Doubts about action, Parental criticism, Parental expectations and Personal standards;
- the Body Uneasiness Test (Cuzzolaro et al. 1999), assessing body uneasiness on 5 subscales: Weight phobia, Body image concerns, Avoidance, Compulsive self-monitoring and Depersonalization.

Results

Among respondents, 65 participants showed clinically relevant symptoms of paruresis as suggested by a score above the cut-off at the PCL. Mean age in this sample was 28 ys (SD= ±7.75 ys); most of participants were males (87.7%; N=57), in line with previous research data (Vythilingum et al., 2002).
The clinical sample was compared to a convenience sample of adults (matched by age and gender distribution) (N=68) who scored below the cut-off on screening measures for paruresis (PCL) and general psychopathology (SCL-90-R).
Compared to non clinical controls, paruretics showed:
- higher scores on both subscales of the HNS;
- higher scores on the Parental criticism subscale of the FMPS;
- higher scores on the Avoidance subscale of the BUT, suggesting the presence of avoidance behavior connected to their body image.

Discussion
Results will be discussed in terms of psychological variables predisposing to paruresis and implications for treatment.

**NO. 29**

**COMPARISON OF COMBINED THERAPY WITH SSRI PHARMACOTHERAPY ALONE IN PATIENTS WITH PANIC DISORDER**

*Lead Author: Hye-Min Song, M.A.*
*Co-Author(s): Jung-Yoon Heo, M.D., Ji-Hae, Kim, Ph.D., Jae-Young Oh, M.D., Yun-Hye Oh, M.D., Ik-ki Yoo, M.D., Hee-Joon Yoon, M.D., Bum-Hee Yu, M.D., Ph.D.**

**SUMMARY:**
Introduction
Selective serotonin reuptake inhibitors (SSRIs) are considered to be first-line treatment for panic disorder. But recently, combined therapy (SSRI pharmacotherapy plus cognitive behavioral therapy) has been suggested to be more effective than SSRI alone or CBT alone for panic disorder patients. Thus, we tried to examine if combined therapy (SSRI+CBT) was more effective than pharmacotherapy alone for panic disorder patients after 6 months of treatment.
Methods
Study subjects were men and women over 20 years of age, who met the DSM-IV criteria for panic disorder with or without agoraphobia using the Mini-International Neuropsychiatric Interview. Among the 47 patients who completed the study, 26 patients received combined therapy, whereas 21 patients received SSRI pharmacotherapy alone. The CBT protocol is based on the work of Craske and Barlow (MAP-2) and consists of psycho-education, breathing regulation training, cognitive restructuring, and preparation for the agoraphobia. Patients in the combined therapy group received up to 10 CBT sessions (each session was done for 50 minutes once a week), together with SSRI pharmacotherapy. Patients in both groups were treated with escitalopram for 6 months. We measured the clinical and psychological characteristics before and after treatment using the Panic Disorder Severity Scale (PDSS), Albany Panic and Phobic Questionnaire (APPQ), Anxiety Sensitivity Index-Revised (ASI-R), Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), World Health Organization Quality of Life Scale (WHOQOL) and Stress Response Inventory (SRI).
Results
There were no differences in baseline panic disorder severity, agoraphobic symptoms, general functioning, anxiety and depressive symptoms between the two groups. After 6 months of treatment, both groups showed significant clinical improvement, but the combined therapy group showed greater improvement in anxiety symptoms ($t = 2.79$, $p < .01$) and depressive symptoms ($t = 2.55$, $p < .01$), reduction in panic frequency ($t = 2.03$, $p < .05$), and panic-related distress ($t = 2.20$, $p < .05$), compared with the pharmacotherapy alone group. There was no difference in the mean daily dose of escitalopram between the two groups (9.79 ± 4.19 mg/day vs. 13.85 ± 5.83 mg/day, $t = 2.01$, $p = .06$).
Conclusions
We suggest that combined therapy may be more effective than pharmacotherapy alone especially for the treatment of panic symptoms including general anxiety and depressive symptoms, panic frequency, and panic-related distress.

**NO. 30**

**INTERNET USE FOR SOCIAL COMMUNICATION IN A SAMPLE OF ADOLESCENTS WITH SOCIAL ANXIETY DISORDER**

*Lead Author: Michael Van Ameringen, M.D.*
*Co-Author(s): Beth Patterson, BScN, BEd, William Simpson, BSc, Jasmine Turna, BSc*

**SUMMARY:**
BACKGROUND: Social Anxiety Disorder (SAD) has a childhood onset and a profound impact on social and occupational functioning throughout the lifespan. Adolescents with SAD have been found to be high internet users in our current society where traditional adolescent issues have all been transformed by the electronic stage. Research examining the effects of online communication in teens has been equivocal. Some studies have found that interactions with strangers may be beneficial to teens with social anxiety as it may help alleviate the negative effects of social rejection in the real-their world lives. In addition, the anonymity of the internet may allow introverted teens to compensate for poor social skills and learn relationship skills such as self-disclosure. Other studies have found no associations between internet usage and well-being; and that any social benefits from online communication are gained by extroverted individuals. The impact of internet use on the social functioning in adolescents was examined in an internet survey.
METHOD: A survey was posted on the website of an anxiety research centre about the reasons for and time spent on the internet during their leisure time. The survey asked about online friendships, social media participation and preferred communication style. Participants included a sub-group of adolescents, who completed a validated, self report screening tool for anxiety and depression, as well as measures of functional impairment and symptom severity.
RESULTS: Eighty-five SAD youth, aged 12-17 years, completed the survey. The mean age was 15.1 ± 1.3 years; 13.1% were male. The most common comorbid conditions were Major Depressive Disorder(MDD)(84.1%), Generalized Anxiety Disorder(62.4%), and Obsessive Compulsive Disorder(57.6%). Mean scores on the Social Phobia Inventory were 48.5 ± 13.2,(severe SAD); mean scores on the Personal Health Questionnaire were 18.1 ± 6.0(moderately severe MDD). Most (87.1%) spent online leisure time listening to music, using Facebook(83.5%) and information-searching(77.6%). Facebook(88.2%), was the

social networking site most often used. Only 36% had not made new friends online with respondents feeling equally close to online friends as to friends they had met in person. Forty-eight percent sent text messages and 49.4% emailed to avoid face to face communication, while 54.1% sent text messages to avoid using the phone. The internet facilitated avoidance of socializing in 45%, and facilitated avoidance of seeking help for emotional problems in 73%. In addition, 73% also reported interest in online treatment for SAD if it was affordable and easily accessible.
CONCLUSIONS: These highly symptomatic SAD adolescents use the internet to facilitate avoidance of face to face interactions. Their high use of the internet may make online SAD treatments appealing to this group.

**NO. 31**

**DIFFERENT CHARACTERISTICS ACCORDING TO RESPIRATORY SUBTYPE IN PANIC-DISORDER-PATIENTS**

*Lead Author: Ik-ki Yoo, M.D.*
*Co-Author(s): Hye-Min, Song, M.A., Ji-Hae, Kim, Ph.D., Jung-Yoon, Heo, M.D., Bum-Hee Yu, M.D., Ph.D.*

**SUMMARY:**
Objective: Panic disorder can be divided into the respiratory and non-respiratory subtypes in terms of its clinical presentations. Our study aimed to investigate whether there are any differences in treatment response and clinical characteristics between the respiratory and non-respiratory subtypes of panic disorder patients according to SSRI pharmacotherapy.
Methods: 48 patients completed the study, and panic disorder was the primary diagnosis in all cases. 25 patients were classified as the respiratory subtype, whereas 23 patients were classified as the non-respiratory subtype. Both groups were treated with escitalopram or paroxetine for 12 weeks. We measured clinical and psychological characteristics before and after pharmacotherapy using the Panic Disorder Severity Scale (PDSS), Albany Panic and Phobic Questionnaire (APPQ), Anxiety Sensitivity Index-Revised (ASI-R), State-Trait Anxiety Inventory (STAI-T, STAI-S), Hamilton Anxiety Rating Scale (HAM-A), and Hamilton Depression Rating Scale (HAM-D).
Results: The prevalence of the agoraphobia was significantly higher in the respiratory group than the non-respiratory group although there were no differences in gender and medication between the two groups. The respiratory group showed higher scores on the fear of respiratory symptoms of the ASI-R and ASI-R total scores. In addition, after pharmacotherapy, the respiratory group showed more improvement in panic symptoms than the non-respiratory group.
Conclusion: Panic disorder patients with the respiratory subtype showed more severe clinical presentations, but a greater treatment response to SSRIs than those with non-respiratory subtype. These consequences suggest that classification of panic disorder patients as respiratory and non-respiratory subtypes may be useful to predict clinical course and treatment response to pharmacotherapy.

**NO. 32**

**ASSOCIATION BETWEEN RESPIRATORY SYMPTOM AND STRUCTURAL BRAIN ABNORMALITIES IN PANIC DISORDER**

*Lead Author: Ho-Kyoung Yoon, M.D., Ph.D.*
*Co-Author(s): Seo-Young Yoon, Eun-Jin Han, Changsu Han, M.D.,Ph.D., Yong-Ku Kim, M.D.,Ph.D., June Kang, Byung-Joo Ham, M.D.,Ph.D.*

**SUMMARY:**
Background: Panic disorder (PD) is a heterogeneous phenomenon with respect to symptom profile. Considerable attention has been paid to the phenomenology of panic attacks, and the data have led to an increased recognition that panic attacks are multidimensional, with heterogeneity in their phenomenology. Different clusters of PD symptoms may be related to specific clinical courses, sensitivities to respiratory tests, and responses to medications. We aimed at exploring the structural correlates of respiratory symptom severity in PD patients.
Methods: The study sample consists of 18- to 65-year-old patients with PD recruited from the Department of Psychiatry at Korea University Anam Hospital. All the participants were right-handed according to the Edinburgh Handedness Test. To assess respiratory panic symptom severity, item 5 of the Acute Panic Inventory (API) were used. We acquired high-resolution MRI scans from 20 PD subjects and used FreeSurfer to obtain a measure of cortical thickness. We correlated cortical thickness with respiratory symptom severity in a whole brain analysis.
Results: Respiratory symptom severity was negatively correlated with cortical thickness in the supramarginal gyrus (vertex value= -1.93) and rostral middle frontal gyrus (vertex value= -2.89).
Conclusion: Since respiratory symptom was associated with a reduction of cortical thickness in supramarginal gyrus and rostral middle frontal gyrus, we suggest that this thinning is associated with ventilatory response abnormality. Brain imaging tools, such as functional MRI and PET, have provided valuable insights into the cortical and sub-cortical neural mechanisms that may be involved in processing respiratory sensory information in humans. Hypercapnic activations are restricted to the middle frontal gyrus but shares activations in the prefrontal cortex. Respiratory loads, hypercapnia and low tidal volume activate discrete regions within the posterior parietal lobe. Inspiratory loads activate the supramarginal gyrus. Investigations with neuroimaging and genetics could potentially produce some helpful results, and more studies are still needed to clarify the reliability of respiratory subtype.

**NO. 33**

**EFFICACY AND SAFETY OF MEMANTINE IN A GLOBAL, DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED WITHDRAWAL STUDY IN CHILDREN WITH AUTISM SPECTRUM DISORDER**

*Lead Author: Antonio Hardan, M.D.*
*Co-Author(s): Michael G. Aman, Ph.D., Stephen M. Graham, Ph.D., Robert L. Hendren, D.O., Xinwei D. Jia, Ph.D., Jordan Lateiner, M.S., M.B.A., Rachel Luchini, PharmD., Madhuja Mallick, Raun Melmed, M.D., Robert Palmer, M.D., Adelaide Robb, M.D., Linmarie Sikich, M.D., Dong-Ho Song, M.D., Ph.D, Lei Xie*

**SUMMARY:**
Introduction: Alterations of glutamatergic neurotransmission have been implicated in the pathogenesis of autism spectrum disorder (ASD). Preliminary evidence suggested that memantine, an antagonist of NMDA glutamate receptors, may provide benefits in communication and social behavior in patients with ASD. The objective of this trial was to evaluate the safety, toler-

ability, and efficacy of memantine in pediatric patients with autism, Asperger's disorder, or pervasive developmental disorder not otherwise specified (PDD-NOS) who were previously identified as "confirmed responders" to stable memantine therapy in an open-label lead-in trial (MEM-MD-91, NCT01592786).
Methods: In this international, double-blind, placebo-controlled, randomized withdrawal trial (MEM-MD-68, NCT01592747), patients were assigned (1:1:1) to memantine at full dose (MEM-Full; received in MEM-MD-91), reduced dose (MEM-Reduced; ≤50% of dose received in MEM-MD-91), or placebo (PBO). The primary efficacy parameter was the proportion of patients experiencing loss of therapeutic response (LTR) by Week 12, defined as worsening (increase of ≥10 points) in Social Responsiveness Scale (SRS) total raw score, relative to the score at randomization. Secondary parameters included time to first LTR and change from baseline in Children's Communication Checklist (2nd US Edition; CCC-2) subscales at Week 12. Safety assessment included adverse events (AEs), laboratory, ECG, vital signs assessments and cognitive testing.
Results: A total of 479 patients were randomized (MEM-Full, 158; MEM-Reduced, 161; PBO, 160). In the safety population, 62.9% of patients had autism, 18.2% had Asperger's disorder, and 18.9% had PDD-NOS. Similar numbers of patients across treatment groups discontinued due to LTR (MEM-Full, 63.3%; MEM-Reduced, 67.1%; PBO, 66.9%). One patient (PBO) withdrew due to an AE (irritability). The primary efficacy parameter, proportion of patients with LTR by the end of study, was not significantly different between treatment groups (MEM-Full vs PBO, P=0.659; MEM-Reduced vs PBO, P=0.784; ITT, n=471). Likewise, no significant differences between memantine groups and placebo were detected in time to first LTR or on any of the CCC-2 subscales at Week 12. AE rates were similar across treatment groups (MEM-Full, 34.4%; MEM-Reduced, 32.5%; PBO, 31.3%), with irritability being the most common treatment-emergent AE (≥5.0% in any group: MEM-Full, 2.5%; MEM-Reduced, 3.1%; PBO; 5.0%).
Conclusions: In this large, responder-enriched, randomized withdrawal study using weight-based dosing of memantine, no overall difference in LTR rates between the full or reduced memantine doses and placebo was observed for children with ASD. The safety profile of memantine was similar to that observed previously with no new safety concerns.
Funded by FRI

**NO. 34**

**MEMANTINE IN CHILDREN WITH AUTISM: RESULTS FROM A TWO-PART, OPEN-LABEL/DOUBLE-BLIND RANDOMIZED, PLACEBO-CONTROLLED TRIAL AND AN OPEN-LABEL EXTENSION**

*Lead Author: Robert L. Hendren, D.O.*
*Co-Author(s): Michael G. Aman, Ph.D., Robert L. Findling, M.D., Stephen M. Graham, Ph.D., Antonio Y. Hardan, M.D., Hai-An Hsu, Ph.D., Ephraim Katz, Ph.D., Ola Kehinde-Nelson, Raun Melmed, M.D., Robert Palmer, M.D.*

**SUMMARY:**

Introduction: Preliminary open-label clinical observations suggested that memantine, a moderate-affinity, uncompetitive NMDA glutamate receptor antagonist, improved social interaction and communication in children with autism. Final results from a placebo-controlled study and an open-label extension (OLE) study in 6–12 year-old pediatric patients with autism are presented.
Methods: Study MEM-MD-57A (NCT00872898) consisted of 2 parts: Part 1 was a pharmacokinetic evaluation of single-dose, extended-release memantine (3 mg); Part 2 was a randomized, double-blind, placebo-controlled, 12-week safety and efficacy evaluation. The primary efficacy parameter for Part 2 was the change from baseline in Social Responsiveness Scale (SRS) total raw score at Week 12. Secondary parameters included the Week 12 total and subscales scores of a performance-based clinician-rated instrument, the Core Autism Treatment Scale-Improvement (CATS-I), and change from baseline in Children's Communication Checklist (2nd US edition; CCC-2) subscales at Week 12. Safety assessments included adverse events (AEs). MEM-MD-67 (NCT01999894) was a 48-week OLE to MEM-MD-57A examining the long-term safety of memantine (3-15 mg/d). Safety assessments included AEs. Exploratory efficacy measures included SRS, CATS-I, and CCC-2.
Results: The dose-finding Part 1 of the MEM-MD-57A trial confirmed a maximum dosage of 15 mg/d. Of 121 children randomized in Part 2 (memantine [MEM], n=60; placebo [PBO], n=61), 14.0% discontinued the trial prematurely (MEM 10.0%; PBO 18.0%). The primary reason for discontinuation was AEs (MEM 5.0%; PBO 6.6%). Statistically significant improvements in SRS total raw score mean change from baseline at Week 12 were observed within each treatment group (P<0.001), although no significant between-group difference was detected (P=0.978). No significant between-group differences were observed on the CATS-I and on 9 of 10 CCC-2 subscales (significance in favor of placebo was observed on the context subscale, P=0.020).
Of 102 children participating in the 48-week OLE study, 64.7% completed the trial, with 8.8% withdrawing due to AEs, aggression (2.9%) and irritability (2.0%) being the most frequent. The most common treatment-emergent AEs were upper respiratory tract infection (14.7%), cough (9.8%), seasonal allergy (8.8%), and weight increased (8.8%). Improvement in SRS total raw score observed at the end of MEM-MD-57A trial (-9.9) continued during OLE to -15.6 at the end of MEM-MD-67. In general, other efficacy measurements also tended to show numerical improvements from the end of MEM-MD-57A.
Conclusions: Memantine treatment (both short and long-term) is well tolerated in 6–12-year-old patients with autism. Clinical improvement was observed over 12 weeks with both MEM and PBO on the SRS, with no significant difference between treatments groups. This improvement was maintained for up to 48 additional weeks with open-label memantine.
Funded by FRI

**NO. 35**

**SAFETY AND TOLERABILITY OF MEMANTINE IN CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD): RESULTS FROM AN OPEN-LABEL, INTERNATIONAL TRIAL**

*Lead Author: Raun Melmed, M.D.*
*Co-Author(s): Michael G. Aman, Ph.D., Stephen M. Graham, Ph.D., Antonio Y. Hardan, M.D., Robert L. Hendren, D.O., Hai-An Hsu, Xinwei D. Jia, Ph.D., Jordan Lateiner, M.S., M.B.A., Madhuja Mallick, Robert Palmer, M.D., Rezwanur Rahman, Adelaide Robb, M.D., Linmarie Sikich, M.D., Dong-Ho Song, M.D., Ph.D.*

**SUMMARY:**

Introduction: The cognitive, behavioral, and communication

benefits of memantine, a well-tolerated, uncompetitive NMDA receptor antagonist, have been shown in randomized trials in Alzheimer's disease and suggested in open-label trials in autism spectrum disorder (ASD). Safety and tolerability of memantine in pediatric patients with autism, Asperger's disorder, or pervasive developmental disorder not otherwise specified (PDD-NOS) were evaluated in an open-label study designed to identify "responders" to the drug.
Methods: Children aged 6–12 years old received open-label memantine in this multinational, multicenter trial (MEM-MD-91, NCT01592786) comprising a 2-week screening period, 6-week dose-titration period, and up to 42 weeks of weight-based dose maintenance: Group A, ≥60 kg, 15 mg/day; Group B, 40–59 kg, 9 mg/day; Group C, 20–39 kg, 6 mg/day; Group D, <20 kg, 3 mg/day. "Confirmed responders" were patients with ≥12 weeks memantine exposure who exhibited ≥10 points improvement (score reduction) in the Social Responsiveness Scale (SRS) total raw score from baseline at 2 consecutive visits separated by ≥2 weeks. Safety assessments included adverse events (AEs) collection. Exploratory efficacy outcomes included change from baseline in SRS total raw and subscale scores.
Results: Out of 1262 patients screened, 906 were enrolled (autism=594; Asperger's=161; PDD-NOS=149; unknown=2). Diagnoses (DSM-IV-TR) were confirmed using the Autism Diagnostic Interview-Revised (ADI-R) and Autism Diagnostic Observation Schedule (ADOS). Completion rates were 87.1% (A), 85.0% (B), 84.4% (C), and 82.4% (D); discontinuation rates due to AEs were 1.4% (1/70), 5.3% (12/227), 7.5% (44/589), and 17.6% (3/17), respectively. A total of 64.0% of patients reported at least one treatment-emergent AE (TEAE; Group A, 58.6%; B, 60.4%; C, 65.5%; D, 82.4%), the most common overall being headache (8.0%), nasopharyngitis (6.3%), pyrexia (5.8%), and irritability (5.4%). Six patients (0.7%) experienced serious AEs: abnormal behavior (2 patients), accidental exposure (1), constipation (1), disinhibition (1), and gastroenteritis (1). Clinically meaningful (≥10 points) improvement in SRS total raw score seen over the study was similar across weight groups and ASD subtypes, with an overall mean change from baseline of -28.2±25.2 by study end. Response rates were similar across ASD subtypes and weight groups. Of 868 patients in the ITT population, 517 (59.6%) met the criteria for a "confirmed responder." Time to response was similar across weight groups and ASD subtypes, with most patients showing a confirmed response at the earliest opportunity (Week 12).
Conclusions: In this largest completed ASD trial to date, memantine was generally safe and well tolerated. Open-label memantine treatment resulted in clinically meaningful benefits on the SRS total raw score across ASD subtypes and weight groups, with a majority of patients meeting the "confirmed responder" criteria.
Funded by FRI

**NO. 36**

**RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF ADJUNCTIVE ARMODAFINIL (150 MG/D) IN BIPOLAR I DEPRESSION : SAFETY AND PRIMARY EFFICACY FINDINGS**

*Lead Author: Caleb Adler, M.D.*
*Co-Author(s): Michael Bauer, M.D., Ph.D., Mark A. Frye, M.D., Terence A. Ketter, M.D., Ronghua Yang, Ph.D.*

**SUMMARY:**

Introduction: Bipolar I disorder is recurrent and debilitating, with a prevalence of ~1%. Although bipolar I depression occurs 3 times more often than mania, it only has limited approved treatment options: one as combination therapy (olanzapine/fluoxetine), another as monotherapy (quetiapine), and a third as both monotherapy and adjunctive therapy to lithium or valproate (lurasidone). The approved bipolar I depression treatments commonly have more adverse effect challenges than mood stabilizers and antidepressants, which lack such approval. This study evaluated efficacy and safety of the low-affinity dopamine transporter inhibitor armodafinil as an adjunctive therapy for bipolar I depression. Methods: Bipolar I disorder patients 18-65 years of age with a major depressive episode (without psychosis) despite stable doses of 1 or 2 of the following: lithium, valproate, lamotrigine, olanzapine, aripiprazole, risperidone, quetiapine, or ziprasidone (ziprasidone only in combination with lithium or valproate), were randomized to adjunctive once-daily armodafinil 150 mg or placebo. The primary efficacy assessment was change from baseline to week 8 in the 30-item Inventory of Depressive Symptomatology-Clinician-Rated (IDS-C30) total score analyzed by mixed-model repeated measures. Safety and tolerability were monitored throughout the study. Results: Of 656 patients screened, 399 were randomized (n=199 placebo, n=200 armodafinil; mean age 44.5 years). Baseline mean IDS-C30 scores were 42.4 in the armodafinil group and 43.5 in the placebo group. Least squares mean ± standard error IDS-C30 change from baseline at week 8 was -20.8 ± 0.99 in the armodafinil group and -19.4 ± 0.99 in the placebo group (P=0.272). Overall, 89 (45%) patients receiving armodafinil and 71 (36%) receiving placebo experienced at least one adverse event (AE); most AEs were mild to moderate in severity. Only 2 AEs were observed in ≥5% of patients in either treatment group: headache in 29 (15%) patients vs 15 (8%) and nausea in 12 (6%) vs 7 (4%) in the armodafinil vs placebo groups, respectively. Serious AEs occurred in 5 (3%) patients receiving armodafinil and 6 (3%) receiving placebo. In total, 7 (4%) patients in the armodafinil group vs 10 (5%) in the placebo group discontinued due to AEs. At endpoint, there were no clinically significant differences vs baseline in serum chemistries, lipid profiles, or hematologic and urinalysis parameters between groups. Sedation/somnolence was seen in 2 (1%) in the armodafinil and 2 (1%) in the placebo group. Mean weight change at endpoint was -0.5 kg in the armodafinil group and 0.3 kg in the placebo group. At least 7% weight gain was seen in 4 (2%) in the armodafinil group and 9 (5%) in the placebo group. Conclusion: In this study, adjunctive armodafinil 150 mg was generally well tolerated and although numerically superior to placebo for decreasing depressive symptoms, this advantage lacked statistical significance. Funding: Teva Pharmaceuticals

**NO. 37**

**MITOCHONDRIAL COMPLEX I AND III MRNA LEVELS IN BIPOLAR DISORDER**

*Lead Author: Süleyman Akarsu, M.D.*
*Co-Author(s): Deniz Torun, M.D., Abdullah Bolu, M.D., Murat Erdem, M.D., Salih Kozan, M.D., Özcan Uzun, M.D.*

**SUMMARY:**

Objective: Neurochemical mechanisms of bipolar disorder have not been fully understood. The studies which have focused on the mitochondrial electron transport chain indicated the

pathology in the mitochondrial function and cerebral energy metabolism. These pathological processes usually occur in the brain circuits regulating affective functions, emotions and motor behaviors. Thus, impairments in the mood-stabilizing mechanisms may develop and symptoms seen in the bipolar disorder may emerge. The expression levels of certain genes located in the mitochondrial complex I and III in the peripheral blood samples of patients with manic episode were investigated in this study. So, we aimed to determine the relationship between mitochondrial complex dysfunctions and bipolar disorder.
Method:32 male patients hospitalized to psychiatric clinic with the diagnosis of bipolar disorder, first-episode manic episodes according to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition (DSM-IV) criteria were included to the study. Patients had no history of psychiatric illness. 35 healthy male subjects with similar socio-demographic characteristics with patient group were enrolled to the study. Messenger ribonucleic acids (mRNA) were isolated from peripheral blood samples of patients and mRNA levels of NDUFV1 NDUFV2, NDUFS1 located in the mitochondrial complex I and UQCR10 located in the mitochondrial complex III were investigated.
Results: Mean age was 21,2± 1,3 years in bipolar patients and 22,1± 1,4 years in control cases (p=0,4). mRNA levels of bipolar patients with manic episode (n = 32) were compared with control subjects (n = 35). Statistically significant differences were determined in complex I genes that were NDUFV1 (p=0,03), NDUFV2 (p=0.00), NDUFS1 (p=0,01). There was no difference between bipolar patients and control subjects in UQCR10 (complex III) gene mRNA levels (p = 0.6).
Conclusion: In this study, mRNA levels of all of the genes representing subunits of complex I (NDUFV1, NDUFV2, NDUFS1) were significantly higher in bipolar patients with manic episode than the control subjects. Today, bipolar disorder has been diagnosed according to the the clinical symptoms of the patients like many psychiatric disorders. As the number of the similar studies increases, biomarkers which can be used in the diagnosis and follow-up of the neuropsychiatric disorders would be obtained.

**NO. 38**

**LINKS BETWEEN COMORBID ANXIETY, BIOPSYCHOSOCIAL FUNCTION, TYPE II DIABETES MANAGEMENT, AND OVERALL HEALTH BURDEN IN THOSE WITH SERIOUS MENTAL ILLNESS**

*Lead Author: Laura A. Bajor, D.O., M.A.*
*Co-Author(s): Charles Thomas, MSc, Stephanie Kanuch, MEd, Kristin Cassidy, MA, Neal V. Dawson, MD, Martha Sajatovic, MD*

**SUMMARY:**

Abstract: Background: The prevalence of comorbid anxiety disorders is elevated among patients with Serious Mental Illnesses (SMI), as is the prevalence of diabetes mellitus type II (DM2). We analyzed baseline data collected from an NIMH-funded prospective study on people with SMI and comorbid DM2 (N=157) to study relationships between comorbid anxiety, DM2 management, overall medical burden, and selected measures of symptoms and function.
Methods: We compared individuals with SMI and DM2 with (N=52) and without (N=105) additional comorbid anxiety on HbA1c (DM 2 management), Charlson score (overall medical burden), and measures of mental, physical, and social symptoms and function.
Results: People with SMI, DM2 and anxiety disorder were younger and had higher depression, psychotic and global symptom severity, greater disability, more stigma and discrimination experience, more social withdrawal, and less social support. No significant differences were found between patients with and without comorbid anxiety for either HbA1c or Charlson scores.
Conclusion: Comorbid anxiety disorders in people with SMI and DM2 are generally associated with more severe psychiatric symptoms and greater social and functional disability. However medical burden and diabetes management appear similar to those with SMI and DM2 who do not have anxiety. Further research is needed on clinical and treatment implications of anxiety comorbidity in people with SMI and DM2.

**NO. 39**

**SOCIOECONOMIC AND CLINICAL CHARACTERISTICS OF BIPOLAR PATIENTS AND THEIR CAREGIVERS IN FAMILY INCLUSIVE TREATMENT AT THE FAMILY CENTER FOR BIPOLAR**

*Lead Author: Anne Buchanan, D.O.*
*Co-Author(s): Anahita Bassirnia MD, Patricia Pehme BS, Zimri Yaseen MD, Igor Galynker MD PhD*

**SUMMARY:**

Background: The Family Center for Bipolar (FCB) offers Family Inclusive Treatment to bipolar patients and/or their caregivers seeking family-oriented treatment modality. The aim of this study is to assess the socioeconomic characteristics of patients with their caregivers at FCB and to evaluate its relationship with their symptom severity.
Methods: 264 patients and their caregivers participated in our study. Eight different questionnaires were used: 1) Demographic data questionnaire, 2) Self-Report Manic Inventory (SRMI), 3) Center for Epidemiological Studies – Depression Scale (CES-D), 4) State Trait Anxiety Inventory (STAI), 5) Sheehan Panic and Anxiety Scale (SPAS), and 6) Perceived Stress Scale (PSS) 7) Brief Symptom Inventory (BSI), and 8) SCL-90. The statistical analyses included student t-test, correlation and univariate analyses.
Results: Bipolar patients were not significantly different from their caregivers in their age or race. However, they were significantly more male, single, without any children, and living alone. There was no significant difference between bipolar patients and their caregivers in their level of education, however patients were significantly more financially dependent, had less annual income, and had a higher rate of unemployment. When evaluating the relationship between patients' symptoms and their socioeconomic characteristics, there was no relationship between patients' clinical symptoms and their age, gender, race, relationship status or level of education. However, there was a significant relationship between patients' stress, measured by the perceived Stress Scale (PSS), and their annual income (p-value< 0.05). Furthermore, there was a significant association between patients anxiety measured by Sheehan Panic and Anxiety Scale (SPAS) and their living situation (p-value< 0.05). Our data showed that those patients who live alone or with a roommate have higher level of anxiety compared to those who live with family.
Conclusion: This study shows that the socioeconomic status for FCB patients with bipolar disorder is lower than that of their caregivers, regardless whether they are family or not, and they live alone more often. Those with low socioeconomic status

have more stress and anxiety, which should inform their treatment selection.

**NO. 40**

**EFFICACY AND SAFETY OF LURASIDONE IN BIPOLAR I DEPRESSION: POOLED RESULTS OF TWO ADJUNCTIVE THERAPY STUDIES WITH LITHIUM OR VALPROATE**

*Lead Author: Joseph R. Calabrese, M.D.*
*Co-Author(s): Josephine Cucchiaro, P.hD., Hans Kroger, M.P.H., MS., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D., Kaushik Sarma, M.D., Robert Silva, Ph.D., Trisha Suppes, M.D., Ph.D.*

**SUMMARY:**
Introduction: Few studies have been reported that demonstrate the efficacy of adjunctive therapy for patients with bipolar I depression who have had an insufficient response to monotherapy with mood stabilizing agents. Previous studies with aripiprazole and ziprasidone have failed to demonstrate efficacy (Sachs et al, 2011; Thase et al, 2008; Lombardo et al, 2012). The aim of the current pooled analysis was to evaluate the efficacy and safety of lurasidone adjunctive therapy with lithium (Li) or valproate (VPA) in bipolar I depression.
Methods: Data were pooled from two adjunctive therapy studies (D1050235 and D1050236) of similar design. Patients meeting DSM-IV-TR criteria for bipolar I depression were randomized to 6 weeks of once-daily, double-blind treatment with lurasidone 20-120 mg/day (N=355) or placebo (N=327), adjunctive with either Li or VPA. Changes from baseline in MADRS (primary outcome) and Clinical Global Impression Bipolar Severity of Illness (CGI-BP-S; key secondary assessment) were analyzed using MMRM. Secondary efficacy outcomes included the Quick Inventory of Depressive Symptomology – Self Report (QIDS-SR16) and the Hamilton Anxiety Rating Scale (HAM-A).
Results: Treatment with lurasidone (vs. placebo) was associated with significant improvement in the mean MADRS score (-14.4 vs. -11.9; p=0.003; effect size: 0.25) and CGI-BP-S scores (-1.7 vs. -1.3; p=0.001), QIDS-SR16 scores (-7.4 vs. -5.7; p≤0.001), and the HAM-A score (-7.0 vs. -5.0; p≤0.001 [LOCF]) at week 6. Responder rates (≥50% reduction in MADRS at week 6) were significantly higher with lurasidone vs. placebo (48% vs. 37%; p=0.002; LOCF-endpoint). In the pooled safety population, minimal (LOCF-endpoint) changes were observed with lurasidone in mean weight (+0.1 vs. +0.2 kg), median total cholesterol (-4.0 vs. -1.0 mg/dL), LDL (-3.0 vs. -1.0 mg/dL), triglycerides (+4.0 vs. -2.0 mg/dL), and glucose (0.0 vs. 0.0 mg/dL) vs. placebo. Discontinuation rates due to treatment-emergent adverse events were similar (5.8% vs. 4.8%); adverse events (≥5% and greater than placebo) were nausea (13.9% vs. 10.2%), Parkinsonism (12.8% vs. 8.1%), somnolence (11.4% vs. 5.1%), and akathisia (10.8% vs. 4.8%). The incidence of protocol-defined treatment-emergent mania was similar (lurasidone=0.8% vs. placebo=1.5%).
Conclusions: The pooled results from two short-term studies of similarly design demonstrated that lurasidone adjunctive therapy with lithium or valproate is an effective treatment for patients with bipolar I depression. Treatment with lurasidone was well-tolerated, with minimal effect on weight or metabolic parameters.
Trial registration: clinicaltrials.gov identifier: NCT00868699 and NCT00868452
Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 41**

**EVALUATION OF METABOLIC SYNDROME AND SEXUAL DYSFUNCTION IN PATIENTS WITH BIPOLAR DISORDER**

*Lead Author: Ayca Can, M.D.*
*Co-Author(s): Nesrin Tomruk M.D., Nihat Alpay M.D.*

**SUMMARY:**
Objectives: This is the first study in bipolar patients, aimed to evaluate possible relationship between metabolic syndrome (MetS) and its components with sexual dysfunction (SD). Secondary objective is the evaluation of possible association between sexual dysfunction with CRP levels and 10 year cardiovascular risk (CVR) scores in bipolar patients. Methods: 128 patients with bipolar disorder (BPD), diagnosed by Structured Clinical Interview for DSM-Axis I Disorders, were assessed cross-sectional for MetS based on the Society of Endocrinology and Metabolism of Turkey (TEMD) criteria. Euthymia was confirmed by the Young-Mania Rating Scale and the Hamilton Depression Rating Scale. Sexual Function was assessed by the Arizona Sexual Experience Scale (ASEX). Patients were divided into two groups as patients with MetS and patients without MetS as control group. Results: 45.3% of the patients were MetS according to TEMD, a prevalence rate higher than previous studies in patients with BPD. Almost half of the patients were confirmed to have SD. There was no difference in frequencies of SD between women who had MS and who did not. However women with MetS scored significantly higher on the ASEX. Compared with the control group, men with MetS had higher frequency of SD and higher mean erectile function score. There was an increase in erectile function score as the number of components of the MetS increased. It was found that CVR score in ten years was increased 2 fold in men with SD compared to controls. CRP levels and SD were found not to be related. Abdominal obesity and smoking were statistically significant predictors of SD. Conclusion: The prevalence of the MetS in patients with BPO is alarmingly high and sexual functions deteriorate with MetS in both sexes. Because CVR increases with SD, it should be noted that SD may be a marker in symptom-free coronary artery disease. Clinicians should be aware of this issue and appropriately monitor patients with BPD for MetS and SD as a part of the care for these patients. Further studies are needed to clarify the exact relationship between SD and MetS in bipolar patients.

**NO. 42**

**EXPOSURE-EFFICACY RESPONSE MODEL OF LURASIDONE IN PATIENTS WITH BIPOLAR DEPRESSION**

*Lead Author: Sunny Chapel, Ph.D.*
*Co-Author(s): Yu-Yuan Chiu, Ph.D., Josephine Cucchiaro, Ph.D., Jay Hsu, Ph.D., Antony Loebel, M.D.*

**SUMMARY:**
Introduction: Characterization of dose- response relationships for psychotropic agents may be difficult to determine based on results of individual clinical trials, due to various confounds such as variability in attrition, background medications, flexible dosing designs, and placebo-response rates. The goal of this exposure-efficacy response analysis was to characterize dose-response effects for lurasidone and to simulate lurasidone responses at Week 6 in a fixed dose study design, based on the

results of two recently completed placebo-controlled flexible-dose studies in patients with bipolar depression (Loebel A et al, AJP 2013 a and b).
Methods: The exposure-efficacy response analyses were derived from two randomized, 6-week, double-blind, placebo-controlled, flexible-dose (20-120 mg/day in adjunctive Study D1050235; 20-60 or 80-120 mg/day in monotherapy Study D1050236) studies in subjects with bipolar depression. A total of 5245 Montgomery-Asberg Depression Rating Scale (MADRS) assessments from 825 patients (who had received lurasidone or placebo treatments, with or without lithium or valproic acid background medication) were included in the analysis. The MADRS data were fitted with nonlinear mixed effects modeling methodology implemented using NONMEM software.
The exposure-efficacy response model characterized the time course of the placebo effect. Effect of background medications and effect of lurasidone were added to the time course of the placebo effect. This model allows prediction of the treatment effect contributed by placebo, background medication, and lurasidone. The exposure-efficacy response model was then used to predict exposure-response results from a simulated fixed-dose, placebo-controlled study design.
Results: MADRS vs. time profiles for lurasidone and placebo were adequately described using a linear dose-response relationship, built on an exponential asymptotic placebo model. A net improvement in MADRS due to lurasidone treatment (the drug effect) was significant ($p<0.001$) and a positive dose-response was detected. . Age and use of concomitant medication had statistically significant covariate effects on placebo change. Overall, the dose-dependent effect of lurasidone indicates that higher doses are likely to produce greater improvement. The dose-response was consistent for both monotherapy and adjunctive therapy studies.
Conclusions: The effect of lurasidone was described using a linear dose-response model for drug effect, with increased treatment response in patients with bipolar depression observed at higher doses of lurasidone.
Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 43**

**IDENTIFYING PATIENTS MEETING THE DSM-5 CRITERIA FOR BIPOLAR DISORDER EPISODES WITH MIXED FEATURES IN BIPOLAR DISORDER STUDIES WITH QUETIAPINE XR**

*Lead Author: Catherine J. Datto, M.D., M.S.*
*Co-Author(s): Jason Wright, Pharm.D., Scott LaPorte, B.S., Michelle Shay, Pharm.D.*

**SUMMARY:**

Introduction: The DSM-5 has introduced the “mixed features” specifier in acute bipolar disorder episodes. The rationale for the use of this specifier in acute depressive or manic episodes is to detail the presence of symptoms of the opposite pole.
Methods: This analysis applied the DSM-5 criteria post hoc to randomized controlled clinical trials of quetiapine XR in patients with DSM-IV-TR defined acute depressive episodes of bipolar I or II disorder (1) or acute manic or mixed episodes of bipolar I disorder (2). As these studies captured standardized assessments for symptoms of the identified episode and the opposite pole, such application of the new DSM-5 criteria was possible.
Results: 280 patients were randomized in the bipolar depression (including bipolar I or II) study. Of these, 78 patients were identified post hoc as meeting DSM-5 criteria for mixed features. At the end of the 8-week course of treatment in the full study population, quetiapine XR patients in the modified intent-to-treat (MITT) population had a least squares (LS) mean decrease in MADRS total score 5.5 points greater than placebo-treated patients ($P<0.001$). At Week 8 in the mixed features subgroup, the quetiapine XR group had a LS mean decrease in MADRS score 3.63 points greater than in the placebo group ($P=0.099$). 313 patients were randomized in the bipolar I mania study. Of these, 145 patients were identified post hoc as meeting DSM-5 criteria for mixed features. In the full bipolar mania population at Week 3, the quetiapine XR group in the MITT population had a LS mean decrease in YMRS score 3.83 points greater than patients in the placebo group ($P<0.001$). At Week 3 in the mixed features subgroup, the quetiapine XR group had a LS mean decrease in YMRS score 2.12 points greater than in the placebo group ($P=0.11$). Quetiapine XR when used as monotherapy in patients with acute bipolar I or II depression and bipolar I mania was generally well tolerated.
Conclusion: Applying the DSM-5 criteria for mixed features in patients with acute depressive episodes of bipolar I or II disorder as well as acute manic episodes of bipolar I disorder has identified small subgroups of patients in randomized acute trials of quetiapine XR. In the setting of these small numbers, there was numerical (non-statistically significant) improvement in patients treated with quetiapine XR over placebo. Treatment considerations for patients meeting these mixed features criteria warrant further attention.
Research sponsored by AstraZeneca.
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**NO. 44**

**CLINICALLY RELEVANT CHANGE USING CGI-BP IN PATIENTS WITH ACUTE DEPRESSIVE EPISODES OF BIPOLAR I OR II DISORDER IN QUETIAPINE XR STUDY**

*Lead Author: Catherine J. Datto, M.D., M.S.*
*Co-Author(s): Jason Wright, Pharm.D., Scott LaPorte, B.S., Michelle Shay, Pharm.D.*

**SUMMARY:**

Introduction: Clinical studies of major depressive episodes designed to meet requirements for regulatory approval often include the Montgomery-Åsberg Depression Rating Scale (MADRS) as a primary outcome measure. This scale requires rater training and is not used in routine clinical practice. Another scale often included in clinical trials that may have more relevance for clinical practice is the Clinical Global Impressions Scale for Bipolar Disorder (CGI-BP). This scale does not require rater training and uses clinically intuitive questions. The clinician asks one question in each of the Overall, Depression, and Mania domains on a patient’s clinical severity (CGI-BP-S) or change since starting treatment (CGI-BP-C).
Methods: This was a double-blind, randomized, placebo-con-

trolled study of quetiapine XR (300 mg daily) in adults with a clinical diagnosis of bipolar I or II disorder and acute depressive episodes (HAM-D-17 score>=20 and HAM-D item 1 [depressed mood] score >=2) (1). Primary endpoint was the efficacy of quetiapine XR vs placebo measured by MADRS score change from baseline to Week 8. Secondary variables were CGI-BP-S and CGI-BP-C. Adverse events were recorded throughout the study.
Results: 280 patients were randomized to treatment. Least squares mean (SE) change in MADRS score from baseline was -17.43 (1.24) for quetiapine XR and -11.92 (1.18) for placebo (P<0.001) at Week 8, and -10.16 (0.91) vs -6.54 (0.87) (P<0.001) at Week 1. Mean difference in change in CGI-BP-S Overall for quetiapine XR vs placebo was -0.57 (0.16) (P<0.001) at Week 8, and -0.35 (0.10) (P<0.001) at Week 1. Mean difference in change in CGI-BP-S Depression for quetiapine XR vs placebo was -0.64 (0.16) (P<0.001) at Week 8, and -0.36 (0.10) (P<0.001) at Week 1. Mean difference in CGI-BP-C for quetiapine XR vs placebo was -0.53 (0.15) (P<0.001) at Week 8, and -0.45 (0.11) (P<0.001) at Week 1. Mean difference in CGI-BP-C Depression for quetiapine XR vs placebo was -0.54 (0.15) (P<0.001) at Week 8, and -0.46 (0.11) (P<0.001) at Week 1. The Mania domain showed little change, as expected in this acute depression study, with few switches to mania as defined by YMRS score. Quetiapine XR as monotherapy in patients with acute depressive episodes of bipolar I or II disorder was generally well tolerated and demonstrated no new safety findings.
Conclusion: CGI-BP detected clinical improvements with quetiapine XR vs placebo at 8 weeks and as early as Week 1, as did the MADRS score. CGI-BP-S and CGI-BP-C may be more clinically meaningful and easier for clinicians to use than the MADRS in patients with acute depressive episodes associated with bipolar I or bipolar II disorder.
Research sponsored by AstraZeneca.
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**NO. 45**

**CEREBELLAR AND PREFRONTAL TRANSCRANIAL DIRECT CURRENT STIMULATION TO IMPROVE COGNITION IN PATIENTS WITH BIPOLAR DISORDER: PRELIMINARY FINDINGS**

*Lead Author: Roberto Delle Chiaie, M.D.*
*Co-Author(s): Laura Bernabei, Francesco Saverio Bersani MD, Massimo Biondi MD, Wanda K. Calò MS, Alessandra Corrado MD, Francesco De Michele MD, Francesco Fattapposta MD, Nicoletta Locuratolo MD, Francesco Macrì MD, Daniela Mannarelli MD, Amedeo Minichino MD, Caterina Pauletti MD, Martina Primavera MS, Francesco Spagnoli, Ines Taddei MD, Lucilla Vergnani MD*

**SUMMARY:**

INTRODUCTION: Bipolar Disorder (BD) is a severe and disabling disease. Its course has traditionally been viewed as episodic, with symptomatic and functional recovery between mood episodes. This view has recently been challenged by several studies showing that, despite symptomatic improvements, many BD patients experience cognitive deficits and difficulties in daily functioning even during the euthymic phase of the disease. The aim of the current study was to improve the cognitive functioning of euthymic BD patients using transcranial Direct Current Stimulation (tDCS) applied to the left dorsolateral prefrontal cortex (DLPFC)(anode) and the right cerebellar cortex (cathode).
METHODS: 17 BD patients in the euthymic phase of the disease under pharmacological treatment were enrolled in the study. Patients received 2 mA tDCS for 20 min for 15 days (Monday–Friday on three consecutive weeks). Before (T0) and after the stimulation (T1) the cognitive assessment was performed through the administration of a battery of neuropsychological tests (including Rey Auditory Verbal Learning Test, Wisconsin Card Sorting Test, Rey-Osterrieth Complex Figure [ROCF], Trail Making Test [TMT], Digit Span, Stroop Effect) and a psychophysiological evaluation with the elicitation of P3 components, P3a and P3b. For this purpose, subjects performed a Novelty P3 paradigm. Neurological soft signs at T0 and T1 have also been evaluated trough the Neurological Evaluation Scale (NES).
RESULTS: The scores obtained in the ROCF Immediate and Delayed Recall and in the TMT Part A significantly (p<0.01) improved after the treatment. Several P3 components showed significant (p<0.05) modifications after the treatment: decreased latency of P3a in FZ, decreased latency and increased amplitude of P3b in CZ; the decreased latency of P3b in PZ after tDCS stimulation also showed a favourable statistical trend (p=0.09). NES total score and NES motor coordination subscale significantly improved (p<0.01).
DISCUSSION: Over the past decade mounting evidence has supported the non-motor functions of the cerebellum. A role for the cerebellum in mood, cognition and behaviour is suggested by anatomical studies of cerebellar circuits and their connections with the prefrontal cortex, by clinical observations of cognitive deficits and behavioural disorders in patients with local cerebellar lesions and by data from functional imaging studies. Pope et al recently found a cognitive facilitation by cathodal tDCS of the cerebellum in healthy people. The present study for the first time preliminarily indicates that the concomitant tDCS stimulation of DLPFC and cerebellum leads to significant improvement in memory, attention and the global information processing stream in euthymic BD patients.

**NO. 46**

**ASENAPINE IN THE ACUTE INPATIENT SETTING: A SHORT NATURALISTIC STUDY OF EFFICACY AND ACCEPTABILITY IN THE TREATMENT OF MANIC EPISODES**

*Lead Author: Luiz Dratcu, M.D., Ph.D.*
*Co-Author(s): Leanne Carney, M.D., Taylan O. Yukselen, M.D.*

**SUMMARY:**

INTRODUCTION
Asenapine, a novel atypical antipsychotic that has a high 5HT2A/D2 affinity ratio, low affinity for muscarinic receptors and negligible cardiovascular risk, has been licensed in Europe for the treatment of acute manic episodes in Bipolar Affective Disorder. Unlike other antipsychotics, asenapine is administered sublingually. Randomized controlled trials found that asenapine can reduce manic symptoms from the second day of treatment and induce symptom remission within three weeks. This is a small naturalistic study to ascertain the acceptability, effectiveness and safety of using asenapine for the treatment of manic episodes in the acute inpatient setting.

METHODS
We prospectively examined outcomes in 10 patients (age 43.3 years ± 11.0 mean ± s.d.) admitted to our all-male unit presenting with a manic episode and a diagnosis of Bipolar (n=8) or Schizoaffective Disorder (n=2) who were started on asenapine (10-20mg daily) as mono- or combination therapy. Data on demographics, diagnosis, comorbidity and previous medication were collected for each patient. All were assessed on admission and 4 weeks or discharge, whichever occurred sooner, using four rating scales. The Young Mania Rating Scale (YMRS) measures symptom severity; the Health of the Nation Outcome Scale (HoNOS) covers behaviour, risk and social function; the Brief Psychiatric Rating Scale (BPRS) measures psychotic symptoms and the Global Assessment of Function (GAF) rates psychosocial function.
RESULTS
A decrease in the YMRS score (mean ± s.d.) from 35.3 ± 10.7 to 8.2 ± 9.07 ($p< 0.001$) was reached within 4 weeks. Improvements also occurred in BPRS score from 62.6 ± 9.8 to 32.5 ± 6.8 ($p< 0.001$); HoNOS score from 11.9 ± 15.1 to 6.3 ± 15.1 ($p< 0.001$) and GAF score from 39.9 ± 13.5 to 75.6 ± 4.8 ($p<0.001$). Improvement on YMRS was highly correlated with improvement in GAF (Pearson's $r = -0.78$, $p < 0.001$) and HoNOS (Pearson's $r = 0.86$, $p<0.001$) scores, indicating that reduction in manic symptoms was associated with improved social functioning and reduced risk, respectively. Reported side effects were mostly mild and transient (post-dose dizziness/drowsiness). Two patients reported lingual hypoesthesia.
DISCUSSION
Asenapine proved a safe, well-tolerated and effective treatment of manic episodes in acutely unwell male patients with Bipolar or Schizoaffective Disorder who required admission to hospital. The sublingual mode of use did not affect treatment administration. Patients responded rapidly to therapeutic doses of asenapine, given alone or in combination, without relevant untoward side-effects. Therapeutic response was noted across the full range of manic symptoms, including psychotic symptoms, and accompanied by better social functioning and risk reduction. Further studies are required to establish the benefits and safety of asenapine in the maintenance treatment of this patient group.

**NO. 47**

**RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF ADJUNCTIVE ARMODAFINIL (150 MG) IN BIPOLAR I DEPRESSION : SAFETY AND SECONDARY EFFICACY FINDINGS**

*Lead Author: Mark Frye, M.D.*
*Co-Author(s): Caleb Adler, M.D., Michael Bauer, M.D., Ph.D., Terence A. Ketter, M.D., Ronghua Yang, Ph.D.*

**SUMMARY:**

Introduction: Bipolar I disorder is a recurrent and debilitating illness; depressive phases are pervasive and cause major functional impairment. Only 3 treatments (all of which have second-generation antipsychotic components and commonly have substantive adverse effect challenges) have been approved for bipolar I depression. We report secondary efficacy endpoints and safety of the low-affinity dopamine transporter inhibitor armodafinil for bipolar I depression. Methods: Patients with bipolar I disorder 18-65 years of age with a nonpsychotic major depressive episode despite stable doses of 1 or 2 of the following: lithium, valproate, lamotrigine, olanzapine, aripiprazole, risperidone, quetiapine, or ziprasidone (ziprasidone only in combination with lithium or valproate), were randomized to adjunctive once-daily armodafinil 150 mg or placebo. Secondary efficacy endpoints included rates of 30-item Inventory of Depressive Symptomatology-Clinician Rated (IDS-C30) response (≥50% reduction from baseline total score) and IDS-C30 remission (final IDS-C30 ≤11); as well as changes from baseline in the 16-item Quick Inventory of Depressive Symptomatology-Clinician Rated (QIDS-C16), Clinical Global Impression-Severity of Illness (CGI-S), Global Assessment of Functioning (GAF), Young Mania Rating Scale (YMRS), Hamilton Anxiety Scale (HAM-A), and Insomnia Severity Index (ISI). Continuous variables were analyzed using analysis of variance and categorical efficacy variables were analyzed using the Cochran-Mantel-Haenszel test. Results: Of 656 patients screened, 399 were randomized (n=199 placebo, n=200 armodafinil; mean age 44.5 years ). Although the primary efficacy endpoint did not reach statistical significance, adjunctive armodafinil yielded numeric advantages compared with placebo in least-square mean ± standard error reductions in IDS C30 total (-18.2 ± 1.23 vs -17.1 ± 1.23) and QIDS-C16 (-7.1 ± 0.49 vs -7.0 ± 0.49 ) as well as IDS-C30 responder rate (49% vs 41%) and statistically significant advantages in changes in CGI-S (-1.3 vs -1.1; P=0.032) and GAF scores (13.5 vs 10.4; P=0.007 ) and IDS-C30 remitter (22% vs 13%: P=0.011 ) and CGI-S responder rates (44% vs 34%; P=0.050 ). Least square mean YMRS, HAM-A, and ISI scores improved statistically similarly in both groups. Adjunctive armodafinil was generally well tolerated compared with placebo, with statistically similar rates of manic switch (N=0 [0%] vs 1 [<1%]), anxiety (N=8 [4%] vs N=5 [3%]), insomnia (N=6 [3%] vs N=4 [2%]), sedation/somnolence (N=2 [1%] vs N=2 [1%]), and potentially clinically significant (≥7%) weight gain (N=4 [2%] vs N=9 [5%]). Conclusions: In this study, several (but not all) secondary endpoints supported advantages for adjunctive armodafinil in bipolar I depression compared with placebo. Armodafinil was well tolerated, did not promote manic switches, and had similar rates of anxiety, insomnia, sedation/somnolence, and weight gain as that observed with placebo. Funding: Teva

**NO. 48**

**PARSING THE EFFECTS OF COMORBID ADULT ADHD AND SUBSTANCE MISUSE ON AFFECTIVE LABILITY IN BIPOLAR DISORDER**

*Lead Author: Amir Garakani, M.D.*
*Co-Author(s): Amir Garakani, M.D., Joseph F. Goldberg, M.D.*

**SUMMARY:**

Introduction: Attentional deficits, substance misuse, and affective lability are all common features among adults with bipolar disorder, but little research has parsed their inter-relationships. Methods: Using standardized scales and semi-structured interviews, we evaluated adult ADHD features and affective lability in 108 dually-diagnosed mood/substance use disorder inpatients (mean age 32.6 years, 63% female) drawn from one private suburban academically affiliated inpatient treatment program.
Results: 24% of bipolar subjects had above-threshold ADHD screens. Affective Lability Scale (ALS) total and subscores were significantly associated with ADHD scores (univariate r's ranging from 0.44-0.78). ALS total and most subscale scores were sig-

nificantly higher among bipolar subjects having above- (versus below-) threshold ADHD ratings. Linear regressions to predict affective lability revealed significant partial correlations between bipolar diagnoses and ALS total, depression, elation, and anger subscores, while controlling for significant effects from ADHD comorbidity. Inclusion of current substances of abuse in these models did not change goodness-of-fit.
Conclusions: Comorbid ADHD appears to moderate multiple domains of affective lability in bipolar disorder inpatients, independent of current substance misuse.

**NO. 49**

**THE LEVEL OF SERUM THIOREDOXIN IN MALE PATIENTS WITH MANIC EPISODE AT INITIAL AND POST ECT OR ANTIPSYCHOTIC TREATMENT**

*Lead Author: Abdullah Genc, M.D.*
*Co-Author(s): Murat Emul, M.D., Esra S. Genc, M.D., Ferda C. Gungor, M.D., Cem M. Ilnem, M.D., Said Incir, M.D., Tevfik Kalelioglu, M.D., Nesrin Karamustafalioglu M.D., Akif Tasdemir M.D.,*

**SUMMARY:**

Background: Oxidative stress is defined as exposure to excessive oxidants and/or decrease in antioxidant capacity. Several studies have shown the effects of free radicals and antioxidant defense systems in the bipolar disorder(1-3). We aimed to investigate the role of thioredoxin (TRX) which is a novel oxidative stress marker in patients with bipolar disorder.
Methods: Sixty eight hospitalized bipolar patients who were in manic episode were included in the study. As a control group 30 healthy people were elected. Two groups were formed as: the first group consisted of patients who were taking electroconvulsive treatment (ECT) + antipsychotic treatment (haloperidol+quetiapine) and the other group was taking only antipsychotic treatment. Serum thioredoxin levels were measured before and after treatment.
Results: Pretreatment serum TRX levels of patients were significantly lower than the controls ($p<0.05$). Comparing pre and post treatment serum TRX levels of all patients, post treatment serum TRX levels were significantly lower than the pre treatment serum TRX levels ($p<0.05$). When compared TRX levels between ECT + antipsychotic treatment group and antipsychotic treatment group ($p>0.05$) and within groups ($p>0.05$) we did not find any statistically significant difference.
Conclusion: Oxidative balance is impaired in bipolar disorder manic episode in favor of the oxidants. Decreased serum TRX levels in the manic episode probably mean that antioxidant capacity is decreased in the bipolar disorder patients in the manic episode. Further studies in euthymic and depressive states are also needed to gain more insight about the role of TRX in bipolar disorder.
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**NO. 50**

**TREATMENT OF DEPRESSION IN BIPOLAR II DISORDER USING CRANIAL ELECTRICAL STIMULATION**

*Lead Author: Samantha C. Greenman, B.A.*
*Co-Author(s): Igor Galynker, Ph.D., M.D., Gaiane Kazariants, Ph.D., Siva Koppolu, Deimante McClure, Maria Varvara, M.D., Zimri Yaseen, Ph.D., M.D.*

**SUMMARY:**

Introduction: The depressive phase of bipolar II disorder is especially challenging to treat. Cranial Electrical Stimulation (CES) technology has been used widely for treatment of depression, anxiety and insomnia, but to date, there have been no studies examining the efficacy of this technology to treat bipolar II depression. Our goal in this study was to evaluate the use of CES for treatment of depressive symptoms in bipolar II disorder. We examined changes in levels of depression and quality of life during the four week treatment period.
Methods: Patients diagnosed with bipolar II disorder and currently depressed by SCID-P were recruited from the Family Center for Bipolar in NYC. Participants were randomly assigned to either a placebo group or an active group for the first two weeks of daily 20 minute CES treatment sessions. Both groups received open-label active treatment for an additional two weeks following the randomization period. Participants were assessed at baseline, and weekly during the treatment period, using the Hamilton Depression Rating Scale (HAM-D), the Beck Depression Inventory (BDI), Clinical Global Impressions – Improvement (CGI-I), and the Quality of Life Satisfaction and Enjoyment Questionnaire (Q-LES-Q). ANOVAs were run to compare the groups at baseline, 1st assessment and 2nd assessment; independent t-tests to analyze differences at each time period between groups, and paired t-tests to analyze the quantitative changes between each time point.
Results: The twelve participants were 50% female, with a mean age of 46.83 (16.56), and an average level of education of 16.92 (2.151) years. Results showed a significant interaction between BDI scores and the treatment group ($p = .040$). There is a significant main effect of treatment group on HAM-D scores ($p=.022$¬). Groups did not differ significantly on any of the assessment measures at baseline. At week two, the active group compared to placebo had significantly lower scores on HAM-D and BDI ($p=.027$, $p=.043$), and higher scores on Q-LES-Q and CGI-I scales ($p=.016$, $p=.002$). There was a significant decrease in participants' HAM-D and BDI scores in the active group from baseline to the second week ($p=.029$, $p=.011$) and baseline to the fourth week on HAM-D only ($p=.023$). The placebo group showed a significant decrease on BDI scale scores from baseline to week two ($p=.041$).
Discussion: Our preliminary results indicate that the active group had significantly higher reduction in depression levels compared to the placebo group. The sham treatment group had decreased levels of depression on a self-report measure, indicating the possible placebo effect of CES. Also, patients who received active treatment were assessed as improving significantly while the placebo group had minimal or no change on the CGI-I scale. Clinical implications of this study include treat-

ing the depressive phase in bipolar II disorder more effectively.
Keywords: bipolar II depression, CES

**NO. 51**

**EARLY SUSTAINED RESPONSE WITH LURASIDONE IN THE TREATMENT OF BIPOLAR I DEPRESSION**

*Lead Author: Dan V. Iosifescu, M.D., M.Sc.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Hans Kroger, M.P.H., M.S., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D.*

**SUMMARY:**
Introduction: The goal of this secondary analysis was to evaluate the efficacy of lurasidone in achieving early sustained response during acute treatment of bipolar I depression.
Methods: Patients with bipolar I depression, with a MADRS score ≥20, were randomized to 6 weeks of once-daily, double-blind, placebo-controlled treatment with lurasidone monotherapy with fixed-flexible doses of 20-60 mg/d or 80-120 mg/d (Loebel et al, Am J Psych 2013); or with flexible doses of lurasidone (20-120 mg/d) adjunctive to either lithium or valproate (adjunctive study; Loebel et al, Am J Psych 2013). Early sustained response was defined as a 50% reduction from baseline in the MADRS score by Week 3 that was maintained through Week 6 (LOCF analysis). We evaluated the effect of baseline depression severity (MADRS ≥30 [severe] or <30 [less severe]) and anxiety severity (HAM-A ≥18 [high] or <18 [low/moderate]) on early sustained response. Number needed-to-treat (NNT) values were calculated for early sustained response rates.
Results: Monotherapy treatment with lurasidone (both dose ranges combined) was associated with significantly greater early sustained response compared with placebo (23.9% vs. 10.2%; P=0.002). Rates of early sustained response were similar in patients receiving lurasidone 20-60 mg/d vs. 80-120 mg/d (NNT=8 for both comparisons with placebo). Treatment with adjunctive lurasidone was also associated with significantly greater early sustained response compared with placebo (34.3% vs. 20.6%; P=0.012; NNT=8). Rates of early sustained response were similar for patients receiving adjunctive lurasidone with either lithium or valproate (NNT=8 for both comparisons with placebo). Higher baseline depression severity delayed response to lurasidone in the monotherapy study, but not in the adjunctive therapy study. In the monotherapy study, the severe baseline depression group did not achieve increased early response rates when using the higher (80-120 mg/d) dose range of lurasidone compared with the lower dose range. The presence of high baseline levels of anxiety had no effect on rates of early sustained response to lurasidone in either the monotherapy or adjunctive therapy study.
Conclusions: Treatment of bipolar I depression with lurasidone, whether as monotherapy or adjunctive with lithium or valproate, was associated with significantly higher rates of early sustained response. Higher doses of lurasidone (in the monotherapy study) did not appear to increase early response rates, even among patients presenting with severe depression at baseline. Data from longer-term treatment studies are needed to confirm our findings of early sustained response with lurasidone.

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**NO. 52**

**THE CLINICAL CHARACTERICTICS OF LATE-ONSET MANIA**

*Lead Author: Derya Ipekçioğlu*
*Co-Author(s): Özlem Çetinkaya, M.D., Fulya Maner,Assos. Prof.M.D.*

**SUMMARY:**
Objectives: It is discussed whether mania of late- onset is a separated unique disorder (1, 2,3). There are some studies about manic states among the elderly (4,5,6). We tried to determine the importance of such a discrimination in clinical practice.
Methods: Twenty four elderly patients diagnosed as having bipolar mood disorder type-1 manic episode who had been treated in the inpatient clinic in the Department of Psychiatry, Cerrahpaşa Medical Faculty, the University of Istanbul were classificed into two groups of early and late- onset mania by accepting the age of 50 as the differantiating point. These 24 elderly patients were then compared retrospectively with 29 younger patients according to sociodemographic features, family history, prophylactic treatment they received, clinical manifestations, physical disorders, the duration of staying in hospital, the treatment given and clinical improvement.
Results: It was found that the bipolar disorder had a higher prevalence among women.The frequency of a positive family history was higher among the younger patients and among the elderly whose disorder was of early --onset.The elderly patients whose disorder were of late-onset had a higher prevalence of physical diseases.The duration of education was longer among the younger patients and among the elderly whose disorder were of early onset. Flight of ideas and pressure to keep speech were more frequent among the younger patients and among the elderly whose disorder were of early- onset. The younger patients had more frequently erotomanic delusions . The valproate was more frequently preferred as a mood-stabilizing drug among the elderly, and the elderly patients with late-onset mania used antipsycchotic agents more commonly as compared with those of early- onset mania.The total duration of inpatient treatment was longer among the elderly patients than the younger ones.
Conclusion: Our findings support the view that late-onset mania is a separated unique disorder although more detailed further studies are needed.
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**NO. 53**

**LURASIDONE IN BIPOLAR I DEPRESSION: A 24 WEEK, OPEN-LABEL EXTENSION STUDY**

*Lead Author: Terence A. Ketter, M.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Hans Kroger, M.P.H., M.S., Antony Loebel, M.D., Kaushik Sarma, M.D., Robert Silva, M.D.*

**SUMMARY:**
Introduction: Lurasidone has recently been approved by the FDA for the treatment of bipolar I depression as monotherapy, and as adjunctive therapy with lithium or valproate (1, 2). This 6 month extension study evaluated the longer-term safety and tolerability of lurasidone in patients who recently completed acute treatment for bipolar I depression.
Methods: Patients completing 6 weeks of double-blind, placebo-controlled treatment with either lurasidone monotherapy (1 study) or lurasidone adjunctive therapy with lithium (Li) or valproate (VPA; 2 studies), were treated for 6 months with once-daily flexible doses of lurasidone, 20-120 mg/d in this open-label extension study (N=817; 39% from monotherapy,; 61% from adjunctive therapy). Safety endpoints were analyzed as change from double-blind baseline for study completers who had initially been randomized to lurasidone in the initial 6 week study (30 weeks of total exposure; monotherapy, n=154; adjunctive therapy, n=104). Efficacy endpoints were secondary, and included the MADRS and the CGI-BP-Severity of depression score.
Results: A total of 68.4% of patients entering the extension study completed it. The top 3 adverse events were akathisia (8.1%), headache (7.7%), nausea (7.6%). Discontinuation due to an AE occurred in 7.0% of monotherapy patients and 8.7% of adjunctive therapy patients. Mean change in weight from double-blind Baseline to Month 6 for patients treated with lurasidone was 0.45 kg in the monotherapy group and 0.90 kg in the adjunctive group. The following median changes were observed at month 6 for total cholesterol (monotherapy, 0.0 mg/dL; adjunctive, -1.5 mg/dL); triglycerides (monotherapy, +6.0 mg/dL; adjunctive, +8.0 mg/dL); glucose (monotherapy, 0.0 mg/dL; adjunctive, +1.0 mg/dL); and prolactin (monotherapy, +1.3 ng/dL; adjunctive, +1.3 ng/dL). The incidence of treatment-emergent mania was 1.3% in the monotherapy treatment subgroup and 3.8% in the adjunctive subgroup; the incidence of “any suicidal ideation or behavior” on the Columbia Suicide Severity Rating Scale was 2.1%. The following mean changes from open-label baseline were observed at month 6 (observed case) for the MADRS (monotherapy: -6.9; adjunctive: -6.5), CGI-BP-S (monotherapy: -0.87; adjunctive: -0.85), and Hamilton Anxiety Rating Scale (monotherapy: -2.8; adjunctive: -2.4).
Conclusions: Long term treatment with lurasidone 20-120 mg/d for 6 months was safe and well tolerated with minimal effect on weight and metabolic parameters. There were minimal differences in tolerability or safety outcomes in patients who received lurasidone monotherapy or adjunctive therapy with lithium or valproate. Treatment with lurasidone was associated with sustained improvement in MADRS.

References
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**NO. 54**

**LURASIDONE TREATMENT FOR BIPOLAR I DEPRESSION: EFFECTS ON QUALITY OF LIFE AND PATIENT FUNCTIONING**

*Lead Author: Terence A. Ketter, M.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Hans Kroger, M.P.H., M.S., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D., Kaushik Sarma, M.D., Robert Silva, Ph.D.*

**SUMMARY:**
Introduction: This prespecified secondary analysis evaluated the effect of lurasidone on quality of life and functioning in subjects with bipolar I depression, either as adjunctive therapy with lithium or valproate (D1050235) or as monotherapy (D1050236).
Methods: In both the adjunctive and monotherapy studies, patients with bipolar I depression, with or without rapid cycling, with a Montgomery-Asberg Depression Rating Scale (MADRS) score ≥20 were randomized to 6 weeks of once-daily, double-blind treatment with lurasidone 20-120 mg/day or placebo in the adjunctive therapy study with either lithium or valproate and lurasidone 20-60 mg/day or 80-120 mg/day, or placebo in the monotherapy study,. The primary endpoint was change from baseline to Week 6 in the MADRS total score for both the studies. Functioning was assessed using the Sheehan Disability Scale (SDS) total and subscores. Quality of life was assessed using the Quality of Life, Enjoyment, and Satisfaction scale short-form (Q-LES-Q-SF) questionnaire.
Results: Treatment with adjunctive lurasidone, compared with placebo, was associated with significantly greater improvement at Week 6 in MADRS total score (-17.1 vs. -13.5; p=0.005), SDS total score (-9.5 vs. -7.0; p=0.012), SDS social life and family life/home responsibilities subscores (both p=0.003), and Q-LES-Q-SF score (+22.2 vs. +15.9; p=0.003). Adjunctive therapy with lurasidone was associated with a significantly higher proportion of subjects with improvement in Q-LES-Q-SF scores from below normal to normal (64.3% vs. 44.1%; p=0.001; community norm ≥52.3) compared with placebo. Monotherapy with lurasidone was associated with significantly greater improvement at Week 6, compared with placebo, in MADRS total score (lurasidone 20-60 mg, -15.4; and lurasidone 80-120 mg, -15.4; vs. placebo, -10.7; p<0.001 for both comparisons); in SDS total score (lurasidone 20-60 mg, -9.5; and lurasidone 80-120 mg, -9.8; vs. placebo, -6.3; p=0.003 and p<0.001, respectively). Monotherapy with lurasidone, compared with placebo, was associated with significantly greater endpoint improvement, for both dose groups on SDS social life subscores (p<0.001 for both) and SDS family life/home responsibilities subscores (p<0.01 for both); and on the Q-LES-Q-SF score (p≤0.001 for both). Monotherapy with lurasidone, compared with placebo, was associated with a significantly higher proportion of subjects with improvement in Q-LES-Q-SF scores from below normal to normal (lurasidone 20-60 mg, 55.3%; lurasidone 80-120 mg, 54.2%; vs. placebo 32.9%: p<0.001 for both comparisons).
Conclusions: Treatment of bipolar I depression with lurasidone adjunctive therapy with lithium or valproate, or as monotherapy was associated with significant improvement in quality of life and functioning as measured by patient-rated scales.

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**NO. 55**

**UTILIZATION OF THE MOOD DISORDERS QUESTIONNAIRE ON AN INPATIENT MOOD DISORDERS UNIT**

*Lead Author: Simon Kung, M.D.*
*Co-Author(s): Renato D. Alarcon, M.D, M.P.H, Mark A. Frye, M.D., Maria I. Lapid, M.D., Brian A. Palmer, M.D, M.P.H., Kathleen A. Poppe, R.N., M.S.*

**SUMMARY:**
Background: Screening instruments are increasingly being recommended as part of good clinical practice. The Mood Disorders Questionnaire (MDQ) is a widely used screening instrument for bipolar disorder, with a sensitivity/specificity of 73% /90% in a psychiatric outpatient sample and 28%/97% in a US population-based sample. This study reports on the clinical utilization of the MDQ on a large subspecialty Mood Disorders Unit.
Method: Between April 2011 and August 2013, patients admitted to Mayo Clinic Department of Psychiatry's Mood Disorders Unit completed an MDQ. Patients with a discharge diagnosis of unipolar or bipolar disorders, as clinically assessed by a board-certified psychiatrist, and who fully completed the MDQ, were included in the study. For those with multiple admissions, only the first MDQ was used. Based on the definition of a positive MDQ screen score (7 or more items endorsed positive with concurrence and disability), sensitivity and specificity were calculated, with exploratory measures based on different screening scores.
Results: A total of 1330 patient MDQ's were identified, but after excluding incomplete questionnaires and non-unipolar or bipolar diagnoses (such as anxiety, adjustment, or schizoaffective disorders), 860 MDQ's remained and were used in the analysis. One-hundred and fifty-four patients (18%) were diagnosed with bipolar disorder, and 706 (82%) with unipolar depressive disorder. The average length of stay was 7.6 days. By using a threshold of 7, as recommended by the MDQ, sensitivity was 71% and specificity, 82%. A cutoff score of 6 yielded sensitivity of 73% and specificity of 78%, whereas a cutoff score of 8 yielded sensitivity and specificity of 66% and 86%, respectively.
Conclusions: The sensitivity of the MDQ in an inpatient mood disorders setting is comparable to that in an outpatient psychiatric population, but the specificity is not as high. In busy clinical practices, a screening instrument for bipolar disorder is highly desirable, and the MDQ can be clinically useful in an inpatient mood disorders setting.

**NO. 56**

**ASENAPINE IMPROVES THE YOUNG MANIA RATING SCALE TOTAL SCORE IN SUBJECTS 10–17 YEARS OF AGE DIAGNOSED WITH BIPOLAR I DISORDER**

*Lead Author: Ronald Landbloom, M.D.*
*Co-Author(s): Sabine Braat, M.S., Robert L. Findling, M.D., M.B.A., Janelle Koppenhaver, M.A., Mary Mackle, Ph.D., Armin Szegedi, M.D., Ph.D., Qi Zhu, Ph.D.*

**SUMMARY:**
BACKGROUND: Asenapine is an oral second-generation antipsychotic, which is indicated, as monotherapy or adjunctive therapy, for manic or mixed episodes associated with bipolar I disorder in adults.
AIM: To test the superiority of ≥1 asenapine dose compared to placebo (PBO), measured by change from baseline in the Young Mania Rating Scale (YMRS) total score, in subjects aged 10–17 years diagnosed with bipolar I disorder.
METHODS: Subjects were diagnosed based on DSM-IV-TR™ criteria and randomized into a 1:1:1:1 distribution into PBO and the following asenapine groups: 2.5 mg twice daily (bid), 5 mg bid, and 10 mg bid. Asenapine was administered as a fast-dissolving sucralose flavored sublingual tablet. The primary efficacy end point was change from baseline on day 21 in the YMRS total score. The key secondary end point was change from baseline on day 21 in the Clinical Global Impression Scale for use in Bipolar Illness (CGI-BP) overall score. Efficacy for the Full Analysis Set (n=395) was analyzed with a Mixed Model for Repeated Measures (MMRM) using Hochberg's procedure to correct for multiplicity of the 3 asenapine to PBO comparisons for both end points, and the safety data were analyzed using the All-Subjects-as-Treated (n=403) population.
RESULTS: Across the groups a similar percentage completed treatment day 21 (2.5 mg bid: 84.6%; 5 mg bid: 88.9%; 10 mg bid: 87.9%; PBO: 86.1%). The discontinuation rate due to adverse events (AEs) was: 2.5 mg bid: 6.7%; 5 mg bid: 5.1%, 10 mg bid: 5.1%, PBO: 4.0%. The MMRM analysis showed statistically significant differences for each dose compared to PBO (least squares [LS] mean [95% CI]: 2.5 mg bid: –3.2, [–5.6, –0.8; P=0.009]; 5 mg bid: –5.3 [–7.7, –2.9; P<0.001]; 10 mg bid: –6.2 [–8.6, –3.8; P<0.001]). The improvement in the YMRS total score was statistically significant by day 4 for each dose vs PBO. The MMRM analysis revealed statistically significant differences in the CGI score for each dose vs PBO (LS mean [95% CI]: 2.5 mg bid: –0.6 [–0.9, –0.3; P<0.001]; 5 mg bid: –0.7 [–0.9, –0.4; P<0.001]; 10 mg bid: –0.7 [–1.0, –0.4; P<0.001]. The improvement in the CGI-BP overall score was statistically significant by day 7 for each dose vs PBO. Serious AEs were similar across groups: 2.5 mg bid: 0%, 5 mg bid: 2%, 10 mg bid: 2%, PBO: 3%, and no deaths occurred. The following safety events occurred more frequently in the asenapine groups: somnolence, sedation, hypersomnia, and the combination of oral hypoesthesia and dysgeusia. Weight gain ≥7% from baseline to end point was more frequent in all asenapine groups. Dizziness occurred more frequently in the 5-mg bid group.
CONCLUSIONS: In subjects 10–17 years of age, the YMRS and CGI-BP overall scores improved with all doses of asenapine vs PBO. The safety and tolerability profiles of all doses were similar. Somnolence, sedation, hypersomnia, oral hypoesthesia and dysgeusia, and weight gain were more common in all asenapine groups vs PBO.
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**NO. 57**

**GLOBAL IMPROVEMENT IN BIPOLAR-MANIA-PATIENTS TREATED WITH CARIPRAZINE**

*Lead Author: Robert E. Litman, M.D.*
*Co-Author(s): Suresh Durgam, M.D., István Laszlovszky, Pharm.D., Ph.D., Kaifeng Lu, Ph.D., Krisztián Nagy, M.D.*

**SUMMARY:**
Background: Bipolar I disorder is associated with morbidity,

mortality, and disability. The Clinical Global Impression-Severity (CGI-S) scale measures the patient's global severity of illness. Unlike scales designed to measure specific symptom severity such as the Young Mania Rating Scale, the CGI-S can capture additional dimensions that contribute to disease severity such as comorbidity, patient distress, and functional impairment. Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. Cariprazine was effective and well-tolerated in 3 double-blind, placebo-controlled trials in patients with bipolar mania (NCT00488618, NCT01058096, NCT01058668). Pooled data from these studies were used to evaluate the efficacy of cariprazine on overall severity of illness by measuring the percentage of patients that showed categorical improvement in CGI-S scores.
Methods: All cariprazine doses were pooled for this analysis (2 studies: flexibly dosed 3-12 mg/d; 1 study: fixed/flexibly dosed 3-6 mg/d or 6-12 mg/d). The mean change in CGI-S score was the secondary efficacy measure in all 3 studies. This pooled analysis evaluated the proportion of patients who improved from a more severe CGI-S category at baseline to a less severe category at Week 3. The 3 different shift criteria analyzed were: 1) shifting from a baseline CGI-S score of ≥4 (moderately ill or worse) to ≤2 (borderline ill/normal) at Week 3; 2) ≥5 (markedly ill or worse) to ≤2 (borderline ill/normal); 3) ≥6 (severely ill or extremely ill) to ≤3 (mildly ill or better). For each of these categorical shifts, comparisons for cariprazine vs placebo were performed using a logistic regression model and odds ratios (OR) were determined.
Results: At baseline, 97 patients (placebo, n=42; cariprazine, n=55) were severely or extremely ill, 637 patients (placebo, n=254; cariprazine, n=383) were at least markedly ill, and 1033 (placebo, n=428; cariprazine, n=605) were at least moderately ill. A significantly greater percentage of cariprazine vs placebo patients improved from moderately ill or worse at baseline to borderline ill/normal at Week 3 (32% vs 22%; OR=1.71; P<.001). Similarly, a greater percentage of cariprazine vs placebo patients shifted from markedly ill or worse to borderline ill/normal (markedly ill: 32% vs 18%; OR=2.10; P<.001). A greater proportion of cariprazine vs placebo patients shifted from severely or extremely ill to mildly ill or better (55% vs 36%; odds ratio [OR]=2.12; P=.09) but differences did not reach statistical significance, probably due to small sample size.
Conclusions: In patients with manic or mixed bipolar I episodes, cariprazine was associated with clinically relevant improvements in global disease severity, as shown by the greater proportion of cariprazine vs placebo patients that shifted to less severe categories on the CGI-S after treatment. This study was funded by Forest Laboratories, Inc. and Gedeon Richter Plc.

**NO. 58**

**COMPREHENSIVE REHABILITATION PROGRAM IN BIPOLAR DISORDER (PRISMA): A MULTIMODAL APPROACH**

*Lead Author: Carlos Lopez-Jaramillo, M.Sc., Ph.D.*
*Co-Author(s): Sigifredo Ospina, M.D., Jorge Ospina-Duque, M.D., Andrés F. Palacio, M.D., Juan D. Palacio, M.D., Msc., Santiago Saldarriaga-Gómez, M.D., Manuel Valencia, M.D., Cristian Vargas, M.D.*

**SUMMARY:**

Background: Patients with bipolar disorder (BD) represent a high social and economic burden to their families and health system. A multimodal approach to this condition needs to be studied to identify potential benefits for both social environment and health system and to establish further treatment guidance.
Objectives: Characterize actual situation of BD, and apply a multimodal approach that can become a national health politic to reduce social and economic burden; analize the clinical, neurocognitive, neurofunctional, psychlogic, ocupational and social effect in short-mid-long term of a multimodal approach in patients with BD and to determine if it affects clinical functionality, biomarkers and brain activation.
Methods: This is a longitudinal randomized controlled trial in which we made an initial evaluation of 200 BD patients, ages 18 to 65, including psychiatric (DIGS, HRSD, YMRS), psychologic (AQ-12, TEMPS-A, FAST, BIS-11, SAI-E), neuropsychlogic (WCST, CVLT-II, WAIS III, TMT, WMS III, Rey-Osterrieth complex figure), ocupational (Social skills inventory, EMES-M, EMES-C, assertiveness test, SAD scale), familiar (FEICS, FACES-III, ECF) and general practitioner (BRIAN, MMSE, Practices and beliefs about health styles questionnaire) evaluations (Multimodal group); samples for biomarkers (NT-3, IL6, 10, 17, BDNF, NT-3, TNF-alpha, Carbonylation of proteins, Nitration of proteins and TBARS) were obtained and fMRI studies were made in 90 patients defined randomly.
Patients were then randomly assigned into one of both groups: Control or intervention group. In this last one, participants are going to be enrolled in a multimodal approach based in needs identified by the multimodal group, ranging from 12 to 18 specific interventions including functional remediation and 10 psychoeducation sessions compared to control group, evaluated only by psychiatry and general practitioner as usual. We are going to evaluate if intervention affects structural conectivity with DTI and fMRI, assessing DM, salience and corticolimbic network. Finally, all tools will be applied again when intervention is finished, so we can compare data.
Discussion: Our study will allow to know the importance of multimodal intervention in BD, not only targeting intervention goals to functional rehabilitation but to see if functional connectivity may be taken as another goal, additionally to the symptomatic improvement. We are planning a second phase to reproduce the multimodal approach intervention in other cities expecting better outcomes and life quality in all participants.

**NO. 59**

**THE IMPACT OF THE MENOPAUSAL TRANSITION ON SYMPTOM SEVERITY IN BIPOLAR DISORDER**

*Lead Author: Wendy Marsh, M.D., M.Sc.*
*Co-Author(s): Bernice Gershenson, MPH, and Anthony J Rothschild, MD*

**SUMMARY:**

OBJECTIVE: Despite replicated findings that in women without bipolar disorder the late menopausal transition (MT) is associated with increased risk of unipolar depression, little is known about the course of bipolar disorder during the MT. In women with bipolar disorder, the postpartum, a time of rapid reproductive hormonal change and decline, is associated with severe mood episodes. Herein mood is assessed in association with menopausal stage and reproductive hormones in women with bipolar disorder. METHOD: 40-60yo women with treated bipolar disorder in any non-acute mood state were categorized by

menopausal stage (including early postmenopause), diagnosed by structured interview and assessed for menopausal symptom severity. Subjects were prospectively followed with standardized mood and reproductive hormonal assessments in the early follicular phase (if menstrual cycles were predictable) or up to 6wks in unpredictable or absent cycles, for up to five months. RESULTS: Women in the late MT and early postmenopause group compared to women in the early MT group had significantly higher depression (MADRS 14.0 ±9.9 vs 10.4 ±7.8, p<0.01 ) and mood elevation (YMRS 7.4 ± 5.8 vs 5.6 ± 5.5, p=0.04) scores. No consistent association with absolute or variability in estradiol or FSH levels was associated with elevation or depression scores. CONCLUSION: The late menopausal transition and early post menopause may be a time of increased risk of both depression and elevation mood symptom severity in women with bipolar disorder. Further examination of mood in relation to final menstrual period is warranted.

**NO. 60**

**SHORT- AND LONGER-TERM TREATMENT WITH LURASIDONE IN PATIENTS WITH BIPOLAR I DEPRESSION: EFFECT ON METABOLIC SYNDROME**

*Lead Author: Susan McElroy, M.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Andrei Pikalov, M.D., Ph.D., Jay Hsu, Ph.D., Hans Kroger, M.P.H., M.S., Antony Loebel, M.D., Debra Phillips*

**SUMMARY:**
Introduction: Treatment of bipolar disorder with atypical antipsychotics may lead to adverse metabolic consequences. These adverse effects are in addition to the increased risk of metabolic syndrome (MetS) associated with bipolar illness itself. This pooled analysis evaluated the effect of short- and longer-term treatment with lurasidone on the prevalence of (MetS) in bipolar I depression.
Methods: The effect of lurasidone, in the dosing range of 20-120 mg/d, was evaluated on the prevalence of MetS in 3 short-term and 1 longer-term extension study. In the short-term studies, patients with bipolar depression were randomized to 6 weeks of once-daily, double-blind (DB), placebo-controlled treatment with lurasidone, either as monotherapy (1 study; total N=499) or adjunctive to lithium (Li) or valproate (VPA; 3 studies; total N=694). Patients completing the 6-week studies continued to receive 6 months of treatment with lurasidone 20-120 mg/d in an open-label extension study; patients receiving placebo were switched to lurasidone. NCEP criteria for MetS were used (Expert Panel, JAMA 2001;285:2486-2497). Change at 6 months (observed case) was calculated from DB baseline of the acute study.
Results: At DB baseline of the short-term studies, the prevalence of MetS was similar for patients treated in the adjunctive therapy studies (lurasidone, 15.5% and placebo, 13.2%) and in the monotherapy study (lurasidone, 16.7% and placebo, 15.1%). After 6 months of open-label treatment with lurasidone, the prevalence of MetS in patients receiving adjunctive therapy was 23.8% for patients continuing lurasidone, and 16.0% for patients switched from placebo to lurasidone; and the prevalence of MetS in patients receiving monotherapy was 17.9% for patients continuing lurasidone, and 18.1% for patients switched from placebo to lurasidone. For the group of patients with MetS at DB baseline, the following median changes were observed in monotherapy and adjunctive patients, respectively, who completed 6 months of treatment with lurasidone: cholesterol (-6.0 and -5.0 mg/dL), LDL (0.0 and 1.0), HDL (0.0 and 0.0), triglycerides (-25.0 and -22.5 mg/dL), glucose (-2.0 and 0.0 mg/dL); and the following mean changes were observed in weight (-0.5 and -0.5 kg), waist circumference (-1.3 and -1.0 cm), systolic BP (-6.5 and -1.7 mm Hg), and C-reactive protein (+0.1 and +0.2).
Conclusions: In patients with acute bipolar I depression, up to 7.5 months of monotherapy with lurasidone was associated with minimal metabolic disturbance. In patients receiving adjunctive therapy with lurasidone, a somewhat higher proportion of patients met criteria for MetS at month 6 compared with study entry. In at-risk patients who met criteria for MetS at entry into the acute study, treatment with lurasidone (monotherapy or adjunctive) was associated with minimal effects on weight, and modest reduction in metabolic parameters (cholesterol, triglycerides, glucose).
Sponsor: Sunovion Pharmaceuticals Inc

**NO. 61**

**THE RELATIONSHIP BETWEEN PERSONALITY TRAITS AND PERCEIVED INTERNALIZED STIGMA IN BIPOLAR PATIENTS AND THEIR CAREGIVERS**

*Lead Author: Amy Mednick, M.D.*
*Co-Author(s): Anahita Bassirnia MD, Patricia Mensa BS, Lisa Cohen PhD, Zimri Yaseen MD, Igor Galynker MD PhD*

**SUMMARY:**
Background: The Internalized Stigma of mental disorders has a significant negative impact on those suffering from these disorders as well as their families. However, the intensity of perceived stigma is not the same for all patients. Identifying the predictors of higher internalized stigma is the first step in recognizing the population at risk and developing interventions to reduce stigma in this group. The aim of this study is to evaluate the interaction between different personality traits and perceived internalized stigma of mental disorders in a population of bipolar patients and their caregivers.
Methods: 224 bipolar patients and their caregivers were enrolled in this study. Five different questionnaires were utilized: 1) Demographic data questionnaire, 2) Millon Clinical Multiaxial Inventory (MCMI) for personality traits 3) Internalized Stigma of Mental Illness (ISMI) for stigma 4) Self Report Manic Inventory (SRMI) for mania and 5) Center for Epidemiological Studies – Depression Scale (CES-D) for depressive symptoms. In addition to calculating a score for each personality trait, the scores were combined to create externalizing and internalizing personality trait scores. Externalizing personality traits included borderline, antisocial, histrionic, narcissistic and paranoid traits and internalizing personality traits were defined as schizoid, schizotypal, dependent, and avoidant traits. The statistical analyses included student t-tests, univariate and multi-variate analyses.
Results: Patients had higher internalized stigma scores compared to their caregivers. There was a positive correlation between internalized stigma and several personality trait scores including Schizoid (p-value: .007), avoidant (p-value: <.001), dependent (p-value: .030), passive aggressive (p-value: .036), self-defeating (p-value: <.001), schizotypal (p-value: <.001), borderline (p-value: 003) and paranoid (p-value: 0.013) in patients. This correlation was significant only in schizoid

(p-value: .010) and self-defeating (p-value: .049) traits in care givers. There was a positive correlation between internalized stigma and internalizing personality traits, but not externalizing traits. In a multi-variate analysis, internalizing and externalizing personality trait scores were included as independent variables, and mood symptom score as controlling variable to predict the internalized stigma score. The model was significant both for patients and their caregivers (Patient model: r-square: 0.70, p-value: 0.002, Caregiver model: R-square: 0.63, p-value: 0.012) and in both only internalizing personality trait scores were found to be a significant predictor of internalized stigma (Patient model: B=0.226, p-value=<0.001, Care giver model: B=0.163, p-value=<0.001).
Conclusion: Perceived internalized stigma is higher in people with certain personality disorder traits. More specifically, internalizing personality traits are associated with intensity of internalized stigma.

**NO. 62**

**BASELINE PATIENT CHARACTERISTICS OF BIPOLAR II COMPARED TO BIPOLAR I DISORDER IN TRIALS OF ACUTE BIPOLAR DEPRESSION**

*Lead Author: Jamie A. Mullen, M.D.*
*Co-Author(s): Catherine Datto, M.D., M.S., Louisa Feeley, B.S., M.P.H., Scott LaPorte, B.S.*

**SUMMARY:**

Introduction: Although the exact prevalence rate of bipolar II disorder is uncertain, it is at least as prevalent as bipolar I (1). However, it is often misdiagnosed and undertreated, and can be associated with significant disability and comorbidity (2).
Methods: To compare the severity and burden of illness between patients with bipolar I and II disorder, we examined the clinical, demographic, and quality of life baseline data from 1900 patients with bipolar I and 973 with bipolar II disorder enrolled in 5 bipolar depression clinical trials of quetiapine immediate-release and quetiapine extended-release formulations. The diagnosis of bipolar I or II disorder was confirmed using the Structured Clinical Interview for DSM-IV (SCID).
Results: Bipolar I and bipolar II populations had similar proportions of females (58.8% and 62.7%) and similar mean age (39.5 and 38.7 years, respectively), but patients with bipolar I had a numerically higher mean weight (83.3 vs 79.7 kg) than those with bipolar II. Other baseline characteristics were similar between these groups. Patients with bipolar I and II disorder had similar mean baseline MADRS (29.4 vs 27.8, respectively), HAM-D (22.1 vs 23.0), YMRS (5.3 vs 4.8), CGI-BP-S (4.4 vs 4.3), and HAM-A scores (18.3 vs 19.0). Patients with bipolar I and II disorder also had similar mood episode histories: lifetime depressive episodes (13.0 vs 13.0), last-year depressive episodes (1.4 vs 1.4), lifetime manic or hypomanic episodes (9.7 vs 9.8), and last-year manic or hypomanic episodes (1.0 vs 1.0). In addition, patients with bipolar I and II disorder had similar quality of life as measured by Q-LES-Q score (36.2 vs 36.7).
Conclusion: Historically, bipolar II was thought to be less disabling than bipolar I disorder. In this analysis of patients enrolled in treatment trials of bipolar depression, however, bipolar II patients had a similar burden of illness and quality of life. Since treatment approaches may differ for bipolar I and II disorders, and clinical features at the time of depressive episodes did not differentiate these two disorders, a careful inquiry into episodes suspicious for mania or hypomania is important to distinguish between these two disorders.
Research sponsored by AstraZeneca.
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**NO. 63**

**IS THERE ANY DIFFERENCE BETWEEN BIPOLAR AND NON-BIPOLAR SUBJECTS IN THE USE OF FACEBOOK?**

*Lead Author: Joao Paulo R. Nascimento, M.S.*
*Co-Author(s): Fábio G. M. Souza, M.D., Ph. D., Lourrany B. Costa, M.S., Lucas M. C. Moreno, M.S., Renata L. Meneses, M.S.*

**SUMMARY:**

Background: The internet has become important in social relationships. Studies show that mental disorders symptoms may be reflected on the way people behave in the Internet. Social networks, like Facebook, have worldwide use. These networks can be used as a tool to study such behaviors. The association of Bipolar Disorder (BD) and Facebook has not been widely studied.
Objectives: 1) To assess how individuals with BD differ in the use of Facebook from those without the disorder; 2) To identify and to correlate patterns of online behavior suggestive of maniac and depressive episodes.
Methods: Two questionnaires were applied. One with 54 multiple-choice questions about social and demographic variables and aspects of Facebook use and the second one the Mood Disorder Questionnaire (MDQ). The final sample consisted of 674 Facebook users. According to the answers of the MDQ, participants were classified into three groups: Group 1 - subjects not bipolar by MDQ; Group 2 - subjects whose scores were not enough to full fill the complete criteria of MDQ for BD; Group 3 - bipolar subjects by MDQ. Data analysis was done by SPSS. A P value less than 0,05 was considered significant.
Results: Statistically significant differences were found in many aspects between groups 1 and 3, but not when group 2 was compared with either groups. Among these aspects are: the amount of friends on the network (9,9% in Group 1 have more than 1000; 20,5% in Group 3; $x^2$=26,2; P=0,002), the number of people excluded (14,4% in Group 1 excluded more than 30 people; 24,7% in Group 3; $x^2$=22,2; P=0002;) or blocked from their contacts (1,7% in Group 1 blocked more than 30 people; 5,5% in Group 3; $x^2$=30,8; P=0); increased privacy exposure online (0,2% in Group 1 always listen from others that they expose themselves too much on internet; 2,7% in Group 3; $x^2$=19,5; P=0,012); problems in private life due activity on Facebook (19,4% in Group 1; 52,1% in Group 3; $x^2$=46,8; P=0) and influences of emotional status on online behavior. When asked if their mood influences in willingness to access Facebook (41,4% in Group 1; 65,8% in Group 3; $x^2$=27,9; P=0,002). Bipolar subjects use Facebook as entertainment mostly when they are worried/anxious (29,5% in Group 1; 49,3% in Group 3; $x^2$=27,2; P=0,001), differently from when they are happy (3,2% in Group 1 and 6,8% in Group 3; $x^2$=25,5; P=0,004) or sad (5% in Group 1

and 15,1% in Group 3; $x^2$=34,9; P=0,003;).
Conclusion: BD subjects differ in the use of Facebook from those without the disorder in a variety of ways. BD individuals are more sensitive, excluding and blocking more frequently. BD subjects also use the internet more often when they are sad or anxious than are happy.

**NO. 65**

**LURASIDONE MONOTHERAPY FOR BIPOLAR DEPRESSION: INFLUENCE OF BASELINE THYROID FUNCTION ON TREATMENT RESPONSE**

*Lead Author: Andrei Pikalov, M.D., Ph.D.*
*Co-Author(s): Joseph F. Goldberg, M.D., Antony Loebel, M.D., Kei Watabe, M.S.*

**SUMMARY:**

Introduction: Response of patients with bipolar depression to treatment with lithium and antidepressant therapy has been reported to be sensitive to baseline thyroid status, with poorer response observed in patients with lower free thyroxine index values and higher TSH values, even within normal reference ranges (1, 2). This post-hoc analysis evaluated whether thyroid function level influenced treatment response to lurasidone in patients diagnosed with bipolar I depression.
Methods: Patients meeting criteria for bipolar I depression, with a MADRS score ≥20, were randomized to 6 weeks of once-daily, double-blind treatment with either lurasidone 20-60 mg, lurasidone 80-120 mg (combined in the current analysis, n=323) or placebo (n=162). Patients receiving ongoing thyroid hormone treatment (n=27) were excluded from the analysis. Baseline levels of thyroid-stimulating hormone (TSH; normal reference range, 0.35-1.8 µIU/mL) and free thyroxine (free T4; normal reference range, 0.35-5.5 ng/dl) were obtained at screening. Patients were first stratified by median split in baseline TSH (high-normal TSH group, lurasidone n=159; placebo, n=81; and a low-normal TSH group, lurasidone n=159; placebo, n=79), and then further stratified into 1 of 4 baseline thyroid function categories based on a median split of high-normal vs. low-normal free T4. Efficacy assessment was change in MADRS from baseline to week 6 (LOCF, ANCOVA).
Results: At baseline, the median TSH was 1.6 µIU/mL, the median free T4 was 1.01 ng/dl, and the mean MADRS was 30.5. LS mean change from baseline in MADRS was significant for lurasidone vs. placebo in both the high-normal and low-normal TSH groups. The proportion of patients meeting endpoint responder criteria (≥50% reduction in MADRS) was also significantly higher for lurasidone vs. placebo in both the high-normal TSH group (54.5% vs. 36.7%; p<0.05) and the low-normal TSH group (49.0% vs. 26.7%; p<0.01). Based on a further stratification by median free T4 values, patients with lower baseline thyroid function (high-normal TSH + low-normal free T4) had greater effect sizes (0.43 vs. 0.20) for improvement in MADRS with lurasidone than patients with higher baseline thyroid function (low-normal TSH + high-normal T4),.
Conclusions: Lurasidone was effective in treating patients with bipolar depression who had thyroid function within the clinical reference range. In contrast to previous reports in the literature (1, 2), response to lurasidone was not lower in patients with low-normal FT4 and high-normal TSH. Further research is needed to evaluate whether these findings extend to patients with clinically significant thyroid abnormalities, and to determine whether the optimal dose of lurasidone may be influenced by baseline thyroid status.
References:
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NCT00868699
Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 66**

**COMPARISON OF TREATMENT ADHERENCE TO ATYPICAL ANTIPSYCHOTICS AMONG ADULTS WITH BIPOLAR DISORDER IN A MEDICAID POPULATION**

*Lead Author: Krithika Rajagopalan, Ph.D.*
*Co-Author(s): Antony Loebel, M.D., Nicole Meyer, MA, Mariam Hassan, Ph.D., Sally W. Wade, MPH.*

**SUMMARY:**

Study Objective(s): Poor treatment adherence among patients with bipolar disorder is a predictor of relapse and hospitalizations, and may lead to increased costs. This study reviewed baseline characteristics of patients initiated on atypical antipsychotics and compared adherence to atypical antipsychotics during the first 6 months of use in Medicaid-insured adults with bipolar disorder.
Methods: Retrospective study of health insurance claims from multi-state Medicaid database for patients with bipolar disorder, aged 18-64, initiating monotherapy with lurasidone, aripiprazole, olanzapine, quetiapine XR, quetiapine IR, or risperidone between 10/2010-9/2011. Patient characteristics at baseline before initiation of study antipsychotic were reviewed in terms of age, gender, race and comorbid conditions. Adherence over 6 months post-initiation was evaluated using two measures: length of continuous (no therapy gaps ≥45 days) therapy and discontinuation (therapy gaps ≥45 days) rate using pair-wise comparisons (chi-square and paired t-tests).
Results: A total of 3,257 patients were included in the analysis. Eligible patients were allocated to the following cohorts: lurasidone (n=130), aripiprazole (n=865), olanzapine (n=289), quetiapine XR (n=307), quetiapine IR (n=823) and risperidone (n=843). Patients initiated on lurasidone had higher rates of comorbid diabetes and obesity/central obesity compared to other atypical antipsychotics cohorts at baseline (before initiation of study antipsychotics). Mean length of continuous therapy (days) was significantly longer for bipolar disorder patients on lurasidone (mean [SD]: 96.3 [64.0]) compared to aripiprazole (81.9 [58.5]), olanzapine (75.3 [58.3]), quetiapine XR (81.7 [58.7]), quetiapine IR (82.8 [59.3]), and risperidone (78.7 [55.9]) (p<0.001). Patients with bipolar disorder on lurasidone had lower treatment discontinuation rates (55%) compared to aripiprazole (64%), olanzapine (69%), quetiapine IR (65%), and risperidone (69%) (p<0.05). Discontinuation rate for lurasidone (55%) was numerically lower, but not statistically significantly different, from quetiapine XR (64%).
Conclusions: Review of data from this real-world study in a Medicaid population show that more patients with comorbid diabetes and obesity/central obesity at baseline were initiated on lurasidone compared to patients initiating on other atypical antipsychotics. Results show an overall better adherence profile for those patients treated with lurasidone compared to those patients treated with aripiprazole, olanzapine, quetiapine

XR, quetiapine IR, and risperidone in adult Medicaid-insured patients with bipolar disorder.
Sponsored by Sunovion Pharmaceuticals Inc

**NO. 67**

**INCREASED ENERGY/ACTIVITY, NOT MOOD CHANGES, IS THE CORE FEATURE OF MANIA**

*Lead Author: Ana-Letícia Santos-Nunes*
*Co-Author(s): Elie Cheniaux, Ph.D., Alberto Filgueiras, Ph.D., Rafael Assis da Silva, M.D., Luciana Angélica Silva Silveira, M.D., J. Landeira-Fernandez. Ph.D.*

**SUMMARY:**
Background
In the Diagnostic and Statistical Manual of Mental Disorders, 5th edition, the occurrence of increased energy/activity and elation of mood or irritability became necessary symptoms for the diagnosis of an episode of mania or hypomania.
Objective
To evaluate whether increases in energy/activity or mood changes represent the core feature of the manic syndrome.
Methods
The symptomatology of 117 hospitalized patients with bipolar mania was evaluated using the Schedule for Affective Disorders and Schizophrenia-Changed version (SADS-C). Based on six items of the SADS-S related to mania, a Confirmatory Factor Analysis (CFA) was performed. An Item Response Theory (IRT) analysis was used to identify how much each symptom informs about the different levels of severity of the syndrome.
Results
According to the CFA, the item "increased energy" was the symptom with the highest factorial loadings, which was confirmed by the IRT analysis. Thus, increased energy was the alteration most correlated with the total severity of manic symptoms. Additionally, the analysis of the Item Information Function revealed that increased energy was correlated with the larger amplitude of severity levels compared with the other symptoms of mania.
Limitations
Only six manic symptoms were considered. The sample might not be representative because the patients were evaluated while presenting peak symptom severity.
Conclusions
Increased energy/activity is a more important symptom for a diagnosis of mania than mood changes and represents the core feature of this syndrome.

**NO. 68**

**UNDERSTANDING THE NATURE OF BIPOLAR MISDIAGNOSES: DIAGNOSTIC PORTRAIT FROM 10,500 EVALUATIONS IN AN OUTPATIENT PSYCHIATRIC SETTING OVER A DECADE**

*Lead Author: Sybille Saury, M.Sc.*
*Co-Author(s): Andrée Daigneault, M.D., FRCPC, DFAPA, Catherine Duclos, B.A., Ph.D. (CANDIDATE), Daniel Dumont, M.D., M.Sc., FRCPC, Serge Beaulieu, M.D., Ph.D., FRCPC, DFAPA*

**SUMMARY:**
INTRODUCTION
Various studies have pointed to the high prevalence of misdiagnosis in bipolar disorders (BD). In our previously reported 10-year study of 10,492 psychiatric evaluations, concordance between first-line MD referral for BD suspicion and 2ond-line psychiatrist's DSM-IV primary diagnosis was fair, yielding a kappa coefficient of 0.31 (p<0.001) 95% CI (0.28-0.35). The goal of the present study was to identify factors that may explain why BD misdiagnoses remain common. We hypothesized that the primary diagnoses that could be comorbid with BD would be more prevalent in the younger age groups, and would account for the increased rate of diagnostic errors, decreasing the concordance between the reason for referral and the primary diagnosis.
METHODS
The study was conducted at the Hôpital du Sacré-Coeur de Montréal, affiliated to the Department of Psychiatry of Université de Montréal, Montréal, Québec, Canada, which provides a shared-care evaluation program called "Module Evaluation/Liaison" to a catchment area of up to 372,268 residents. The group of false positives BD (referred for BD suspicion but diagnosed with a different disorder) was identified. The final diagnosis of each patient was either mutually exclusive of BD, e.g. major depressive disorder (MDD), mood disorders NOS (MD-NOS), categorized as an "unequivocal misdiagnosis" (UM), or possibly comorbid with BD, e.g. personality disorders (PD), categorized as a "possible misdiagnosis" (PM). An agreement coefficient was established between the referral for BD suspicion and the primary diagnosis using Cohen's kappa coefficient (k), separately for UM and PM for the entire sample and by age group (G1=18-25; G2=26-35; G3=36-45; G4=>45). We then quantified the prevalence of UM and PM, and assessed the distribution of the primary diagnosis, according to age group. Groups were compared using chi-squared tests, and significance was set at p<0.05 (IBM SPSS Statistics 19).
RESULTS
No significant difference was found between k of UM and PM, neither in the entire sample nor within each age group. However in the 367 false positives BD identified (G1 n= 62; G2 n=96; G3 n=95; G4 n=114), there was a significant difference in the prevalence of G1 (11%) and G4 (40%) in UM only (X2(3)=34.4; p<0.001). Significant differences were also found in the proportion of UM and PM in G1 (34% UM vs. 66% PM; X2(1)=6.3, p<0.01) and in G4 (69% UM vs. 31% PM; X2(1)=17, p<0.001). G1 had a greater proportion of PD (53.2%; X2(8)=126.7, p<0.001) and G4 had a greater proportion of MD-NOS (28.1%) and MDD (22,8%); (X2(8)=64.7, p<0.001).
DISCUSSION
Overall, our results indicate that misdiagnoses are similarly prevalent throughout adulthood. However, the nature of BD misdiagnosis evolves with age, where a higher prevalence of comordid diagnoses is found in younger adults and a higher prevalence of mutually exclusive diagnoses is found in older adults.

**NO. 70**

**SAFETY AND TOLERABILITY OF CARIPRAZINE IN PATIENTS WITH ACUTE BIPOLAR MANIA: POOLED ANALYSIS OF 3 PHASE II/III PIVOTAL STUDIES**

*Lead Author: Lakshmi N. Yatham, M.B.A., M.B.B.S., M.R.C.*
*Co-Author(s): Suresh Durgam, M.D., Willie Earley, M.D., István Laszlovszky, Pharm.D., Ph.D., Kaifeng Lu, Ph.D., Krisztián Nagy, M.D., Eduard Vieta, M.D., Ph.D.*

**SUMMARY:**

Introduction: Cariprazine is an orally active and potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. The efficacy and tolerability of cariprazine in patients with bipolar mania was assessed in 3 Phase II/III studies (NCT00488618, NCT01058096, NCT01058668). Here we report an integrated summary of safety and tolerability data from these placebo-controlled studies of cariprazine in patients with acute manic or mixed bipolar I episodes.
Methods: Data were pooled from 3 similarly designed, 3-week, randomized, double-blind trials. In 2 studies, cariprazine was flexibly dosed (3-12 mg/day); the 3rd study used a fixed/flexible dose design (3-6 and 6-12 mg/day). All cariprazine doses were combined for this analysis. Safety was evaluated by adverse events (AEs), clinical laboratory values, vital signs, weight, electrocardiograms (ECGs), Columbia-Suicide Severity Rating Scale (C-SSRS), and extrapyramidal symptom (EPS) scales.
Results: The pooled safety population comprised 1065 patients (placebo, n=442; cariprazine, n=623). The mean daily dose in the cariprazine group was 7.44 mg. Completion rates were similar between cariprazine (71%) and placebo (70%) groups. The most frequently reported treatment-emergent adverse events (TEAEs) (≥5% and twice the rate of placebo) were akathisia (placebo, 5%; cariprazine, 20%), extrapyramidal disorder (5%; 13%), restlessness (2%; 6%) and vomiting (4%; 9%); most TEAEs were mild to moderate in severity. The incidence of serious AEs (SAEs) was similar between groups (placebo, 5%; cariprazine, 6%). AEs leading to discontinuation occurred in 7% of placebo and 12% of cariprazine patients. There was one death in the cariprazine group (pulmonary embolism); this was considered unrelated to treatment. TEAEs of suicidal ideation occurred in 4 placebo and 2 cariprazine patients; there were no suicide attempts.
Mean changes from baseline in weight were 0.17 kg and 0.54 kg for placebo and cariprazine, respectively. Mean changes from baseline to endpoint in blood pressure and pulse rate were slightly greater in the cariprazine group and indicative of a dose-relationship. Cariprazine was not associated with mean increases in ECG parameters (QRS duration, PR interval, QT interval) except for a slight increase in ventricular heart rate relative to placebo (5.0 bpm and 0.9 bpm, respectively). Mean changes in metabolic parameters (eg, lipids, glucose) were generally small and similar between groups. Slightly higher mean increases in ALT and AST were observed in the cariprazine group relative to placebo. No patient met criteria for Hy's law. Prolactin levels decreased in both groups.
Conclusions: In this pooled analysis, treatment with cariprazine for up to 3 weeks was generally safe and well-tolerated.
This study was funded by Forest Laboratories, Inc. and Gedeon Richter Plc.

**NO. 71**

**MINDING THE FROG IN THE STORY: MENTAL STATE TALK, PARENTING STRESS AND SOCIAL-BEHAVIORAL OUTCOMES AMONG HIGH-RISK PRESCHOOL CHILDREN**

*Lead Author: Ozlem Bekar, M.A.*
*Co-Author(s): Rebecca Shahmoon-Shanok, LCSW, PhD, Howard Steele, PhD, Miriam Steele, PhD*

**SUMMARY:**

Mentalization is defined as the ability to understand and treat the self and others as psychological agents who have unique mental states such as emotions, thoughts, intentions, preferences, and beliefs (Steele & Steele, 2008). Many psychotherapeutic approaches formulate their interventions around improving individuals' mentalization capacity as it relates to emotion regulation (Allen, 2012). Development of mentalization skills and positive behavioral outcomes in children are strongly linked with the mentalization capacity of their mothers (Steele, Steele, Croft, & Fonagy 1999). However, research on the link between preschool children's mentalization skills and behavioral outcomes have been inconclusive (Ensink & Mayes, 2010). This study investigates the links between preschool children's and their mothers' mentalization skills in relation to children's behavioral outcomes. The data is drawn from a larger study with preschool children and their mothers from low-income, minority backgrounds. Mentalization is assessed through a wordless picture book, Frog Where are You (Mayer, 1969). First children and then their mothers (n = 90) were asked to narrate the story. Narratives were transcribed verbatim and coded for mental state talk. Social-emotional and behavioral outcomes were assessed through parent questionnaires (CBCL, ASBI, PSI and DECA). After controlling for age, narrative length and vocabulary diversity in narratives, higher frequency of mental state talk in mothers' narratives was positively associated with children's prosocial behaviors and negatively related with behavioral problems. Diversity in mother's mental state language was negatively associated with children's disruptive behaviors. In addition, mothers who verbalized more causal connections between characters' mental states and their behaviors had children with fewer behavioral problems. Lastly, mothers who were able to provide a coherent resolution at the end of the story rated their children as more prosocial, more well-related and sociable. In contrast, children who used more unique mental state words in their narratives, i.e., whose mental state language was more diverse, were rated by their mothers as more "difficult". Moreover, children's tendency to make causal connections between characters' mental states and behaviors were related to more parental stress, emotionally reactivity, aggression and sleep problems. Children who make references to their own mental states were reported to have more attentional problems. Consistent with previous research, results suggest that mentalization skills of mothers are associated with adaptive outcomes in their children, whereas children's use of mental state talk in their narratives were associated with more negative behavioral outcomes. Results are consistent with research reporting that mentalization skills are of neutral social tools (Repacholi et al, 2003) and do not necessarily imply better social functioning in young children.

**NO. 72**

**STIGMA IN ADOLESCENTS WITH AND WITHOUT A PERSONALITY DISORDER: A SELF-FULFILLING PROPHECY**

*Lead Author: Kirsten Catthoor, M.D.*
*Co-Author(s): Joost Hutsebaut, PhD, Dineke Feenstra, PhD, Didier Schrijvers, MD, PhD, Barnard Sabbe, MD, PhD.*

**SUMMARY:**

Introduction: Psychiatric stigma in adolescents is hardly a subject of attention in international literature. Given the specific nature of self and interpersonal impairments in adolescents with personality disorders (PD) – associated with an often chronic pattern of mislabeling their emotional difficulties by

their environment - it is worth studying the experience of stigma in this group.
Hypothesis: Treatment seeking adolescents with highly resistant mental problems will experience more stigma when suffering from PDs compared to a control group with chronic axis 1 disorders.
Methods: 133 adolescents were consecutively admitted to the inpatient unit of the youth department of De Viersprong, a highly specialized mental health care institute in the Netherlands, and enrolled in this study. All patients underwent a standard assessment as part of the intake procedure. The Structured Clinical Interview for DSM-IV Axis II Personality Disorders was used to diagnose Axis II personality disorders. The Stigma Consciousness Questionnaire (SCQ)was used to measure to the awareness of stereotypes of mental illness. The Perceived Devaluation-Discrimination Questionnaire (PDDQ) was used to measure perceived and actual experiences of stigma and discrimination.
Results: Of the 131 adolescents admitted to the inpatient youth department, 111 (84,7%) were female and 20 were male (16.3%). Participants were aged 14-19 years (mean age 16.6, SD = 1.28). Borderline personality disorder was most frequently diagnosed (25.2%), followed by avoidant personality disorder (16.0%). Adolescents with a PD experienced significantly more stigma than adolescents without a PD, as measured by both the SCQ (p=0.001) as well as the PDDQ (p=0.003). The results of the linear regression analyses show that having a borderline PD significantly predicts a higher level of stigma as measured by the SCQ (β=-.256, p=0.005) as well as the DDQ (β=-.0272, p-0.004). The experienced level of stigma in general is associated with severity of personality pathology, as measured by the total number of personality disorder traits.
Conclusion: The results show that adolescents with a PD experience significantly more stigma than those without a PD diagnosis. Borderline personality disorder was found to be a significant predictor of experienced level of stigma. Stigma was associated with severity of personality pathology.
Discussion: High levels of experienced stigma by adolescents with PDs might contribute to their difficulties to engage and stay in treatment. Professionals working with these vulnerable adolescents are advised to address this issue through psychoeducation and counseling. Limitations of this study are the specific recruitment setting and the restricted range of axis I and axis II disorders. Further research is warranted to find out whether a diagnosis of PD contributes to an already existing experience of stigma or – on the contrary – might reduce this experience.

**NO. 73**

**CHILDHOOD TRAUMA AND MENTAL HEALTH PROBLEMS IN JUSTICE-INVOLVED YOUTHS: PATHWAYS TO AGGRESSION**

*Lead Author: Machteld Hoeve, Ph.D.*
*Co-Author(s): Eva A. Mulder, Ph.D., Olivier F. Colins, Ph.D., Rolf Loeber, Ph.D., Geert Jan G.J. Stams, Ph.D., Robert R.J.M. Vermeiren, M.D., Ph.D.*

**SUMMARY:**

INTRODUCTION: Childhood maltreatment is a serious problem, because it is related to a wide array of adverse short- and long-term effects on mental and physical health of the victim. Apart from medical costs related to child maltreatment, it might lead to other costs and harms to society, as childhood maltreatment has found to be associated with later violence and aggression. The link between childhood maltreatment and adolescent aggression is well documented, yet studies that examine potential mechanisms that explain this association are limited. The present study tested the association between childhood maltreatment and adolescent aggression in males in juvenile justice facilities, and examined whether this relationship is mediated by mental health problems. METHOD: Data was collected as part of a standardized mental health screening and assessment in two large Dutch juvenile justice facilities between 2009 and 2012. Adolescent boys (N = 767, mean age 16.7) were assessed shortly after they entered the facility. The following inventories were administered: the Childhood Trauma Questionnaire (CTQ), Massachusetts Youth Screening Instrument-2nd Version (MAYSI-2), and Reactive-Proactive Aggression Questionnaire (RPQ). Structural equation models were used to test mediation models. RESULTS: We fitted a mediation model with paths from childhood trauma to different types of mental health problems, and from mental health problems to reactive and proactive aggression. The direct association between childhood maltreatment and reactive aggression was not significant (β = .16, p > .10), indicating that full mediation was found. Significant indirect paths were found for alcohol and drug use (β = .20, p < .05), depression-anxiousness (β = .08, p < .05), and suicide ideation (β = .07, p < .05). The indirect path via somatic complaints was marginally significant (β = .05, p = .07). For proactive aggression a significant direct link with childhood maltreatment was found (β = .24, p < .05) and only one significant indirect path via alcohol and drug use was found (β = .21, p < .05). DISCUSSION: Results demonstrated different pathways depending on the type of aggression. The association between childhood maltreatment and reactive aggression was fully mediated by a variety of mental health problems. For proactive aggression, the association was partially mediated by substance use problems, but not by other mental health problems. These results are in line with earlier research on reactive aggression, which is considered to be a hostile affect-laden defensive response to provocation, and proactive aggression which is instrumental and organized aggressive behavior and has found to be associated with callous-unemotional traits. Our findings add to the existing evidence that both types of aggression are meaningfully distinct concepts with different etiological pathways.

**NO. 74**

**THE FOREST EXPERIENCE PROGRAM AND IMPROVEMENT OF DEPRESSION, ANXIETY AND SELF-CONCEPT IN ADOLESCENTS**

*Lead Author: Bongseog Kim, M.D., Ph.D.*
*Co-Author(s): Jiung Park, M.D., Jisoon Chang, M.D.*

**SUMMARY:**

Indroduction
About 90% of the population in South Korea has distribution in urban area. Artificial stimulation of excessive urban areas affects adversely on health, otherwise, the forest area significantly is well-known to have positive effects on emotional stability, development of morality and interpersonal relationship in children. However, there have been few studies regarding the influence of forest area on the mental health of adolescents. Aim of this study was to investigate the influence of forest experience program on depression, anxiety and self concept in

adolescents living in urban area.
Methods
A total of 47 adolescents living in Seoul, South Korea were recruited for the study and participated in a series of forest experience programs that Korea National Park Service had developed. Before and after the program, their depression, anxiety and self concept were evaluated using Children's Depression Inventory (CDI), Revised Child Manifest Anxiety Scale (RCMAS), and Offer Self Image Questionnaire-Revised (OSIQ). The outcome measures were analyzed using paired-t tests.
Results
Out of 47 participants, 53.2% (n=25) were female, the average age was 14.40 ± 1.25. CDI score was significantly reduced after the program (before : 12.41±8.34, after : 8.65±9.48, t=2.36, p=.022). Excluding 16 participants whose scores of Lie Scale in the RCMAS were more than 8 on the analysis, the total RCMAS score showed significant reduction after the program (before : 14.87±7.30, after : 10.81±7.81, t=2.27, p=.030). The total score of Lie Scale was also decreased significantly after the program (before : 4.41±2.06, after : 3.14±2.17, t=2.79, p=.009). There was no significant difference in the total score of the total self-image scale in the OSIQ (t=-0.23, p=.820). However, the total self-image scale (tsi) which was used as subscale of the OSIQ was significantly higher after the program (before : 29.94±3.71, after : 38.11±6.45, t=-6.39, p=.000), and the Idealism scale (I) in the OSIQ increased significantly after the program (before : 21.03±3.80, after : 23.17±3.89, t=-2.51, p=.017).
Conclusions
On our analysis, the forest experience program showed considerable positive effects on depression and anxiety in adolescents. This result leads the postulation that the program might be helpful for adolescents to adapt to their surrounding experiences and to achieve improvement in interpersonal relationship.

**NO. 75**

**PSYCHOSIS, SICKLE CELL ANEMIA IN AN ADOLESCENT FEMALE**

*Lead Author: Jose Martinez-Raga, M.D., Ph.D.*
*Co-Author(s): Giovanna Legazpe, M.D., Julia Cebrian, M.D., Monica Miñano, M.D., Fernando Andrés, M.D., Cristina Saez, M.D., Roman Calabuig, M.D.*

**SUMMARY:**

Introduction/Hypothesis. Sickle cell anemia (SCA) is a hereditary blood disorder characterized by erythrocytes that assume an abnormal, rigid sickle shape and consequently become more fragile. Clinically it is characterized by acute lesions with vaso-occlusive crisis, resulting in acute episodes of moderate to severe pain and ulcers in legs, acute thoracic syndrome, infections and stroke, and by chronic lesions such as avascular necrosis or hemosiderosis. The most common psychiatric disorders associated with SCA include depressive and anxiety disorders, whilst psychotic episodes have only been rarely reported.
Methods. Case report of a 13-year old female of African origin with SCA that presented two brief psychotic episodes separated by four weeks, both requiring inpatient admission in both occasions, with full remission after each episode.
Results. This adolescent girl presented acute episodes of psychomotor agitation with elevated psychic anxiety, altered fluctuations of consciousness, mood lability, paranoid delusions, delusions of control and delusional misidentification, as well as kinestesic and auditory hallucinations. Complementary evaluations included antiNMDA antibodies, metabolic disorders and auto-¡mmunity, lumbar puncture, echocardiography, brain MRI an doppler , all of whom were negative. Possible precipitating factors included episodes that the patient reported to from two movies she had recently seen. She was commenced on Risperidone 6mg that was titrated to a total daily dose of 3mg, the maintenance dose. She has not presented any further psychotic episodes, although she has been atended several times since te last discharge for acute and self-limited anxiety episodes.
Discussion / Conclusions. The difficulties of differential diagnoses and whether this were independent or secondary psychotic episodes is key in cases like this.

**NO. 76**

**METABOLIC MONITORING OF CHILDREN ON ANTIPSYCHOTICS: A NATIONAL SURVEY OF CHILD PSYCHIATRISTS**

*Lead Author: Jennifer McLaren, M.D.*
*Co-Author(s): Mary F. Brunette, M.D., Gregory McHugo, Ph.D., William B. Daviss, M.D.*

**SUMMARY:**

Objective: Identify factors related to child psychiatrists' compliance with guidelines for monitoring metabolic side effects among children taking second generation antipsychotics (SGA).
Background: The use of SGA in children and adolescents has been rapidly expanding. These medications can cause significant metabolic side effects, to which youth are especially vulnerable, such as diabetes mellitus and hyperlipidemia. The American Psychiatric Association, American Diabetes Association and the American Academy of Child and Adolescent Psychiatry recommend routine monitoring of fasting blood glucose (GLUC) and fasting lipid profiles (LIP). Past research has suggested that prescribers do not comply with monitoring recommendations, but factors related to compliance with monitoring are poorly understood. This study surveyed a nationwide sample of child psychiatrists regarding their compliance with monitoring for metabolic side effects in children and adolescents treated with SGA.
Methods: An anonymous online survey was sent to 4,144 child psychiatrists throughout the United States. The survey assessed physician's knowledge and attitude about metabolic monitoring in patients treated with SGA. Physician compliance with metabolic monitoring was based on survey respondents reported monitoring frequency of GLUC and LIP. Barriers to this monitoring were also assessed. Separate multiple linear regression models were used to examine the independent associations of such variables with estimated average annual tests of GLUC and LIP.
Results: 1314 child psychiatrists completed the survey in full, yielding a 31.7% response rate. Almost all respondents surveyed were aware of recommendations for monitoring (97%), but fewer agreed with them (GLUC: 80.4%; LIP: 68.6%). In the course of a year, less than half reported they completed lab monitoring on three or more occasions (GLUC:46.3%; LIP: 44.3 %) Multiple regression results show that physician awareness of the recommendations (GLUC: B = 1.303, p < .001; LIP: B= 1.183, p < .001), ease of keeping up with the guidelines (GLUC: B = 0.260, p = .002; LIP: B= 0.277, p = .001), working within an academic practice (GLUC: B = 0.310, p = .001; LIP: B = 0.256, p =.003) and perceived importance of the guidelines in patient

care (GLUC: B = 0.438, p < .001; LIP: B= 0.468, p < .001) all predicted compliance with guidelines. Physician time in practice was inversely proportional to compliance (GLUC: B = - 0.106, p = .005; LIP: B= -0.123, p < .001).
Conclusions: Most child psychiatrists reported awareness of and agreement with guidelines for SGA metabolic monitoring, however, less than half reported they routinely monitored children on these medications. Our findings suggest that interventions to improve monitoring should target attitudes about monitoring, physicians in non-academic practices and physicians who have been out of training for long periods of time.

**NO. 77**

**INVOLUNTARY PSYCHIATRIC ADMISSIONS IN A QUEBEC SAMPLE OF ADOLESCENTS: PREVALENCE AND CLINICAL CORRELATES**

*Lead Author: Javad Moamai, M.D., M.Sc.*

**SUMMARY:**

OBJECTIVE: While Involuntary Psychiatric Admissions (IPA) have a long-standing tradition in psychiatric care, knowledge of IPA in adolescents is limited. Therefore, the aim of this study was to describe the prevalence and clinical correlates of IPA in a sample of hospitalized adolescents.
METHOD: A cross-sectional study was conducted using data (ICD-9 and ICD-10 format) taken from discharge records of all 1201 adolescent (14 to 17 years old) in a Quebec-based facility, between 1995 and 2013. Non-parametric descriptive statistics were used for the analysis.
RESULTS: The observed prevalence rate of IPA was 9% (Girls: 7%, Boys: 14%). The rates increased vastly over the study period (1995-96: 4%, 2012-13: 12%). A logistic regression analysis indicated that IPA were correlated with schizophrenia, comorbid personality disorders, substance related disorders, first admission status and bipolar disorders. No correlation was found with the gender or age.
CONCLUSIONS: These findings suggest that IPA rate among adolescents rose from 1995 to 2013. IPA were mainly correlated with psychotic disorders and comorbid personality disorders. Furthermore, the finding that IPA are more prevalent in the first admissions subgroup, makes it a major issue in the primary psychiatric care of adolescents.

**NO. 78**

**ASSOCIATION BETWEEN ANXIETY AND ALLERGIC DISEASES IN CHILDREN;**
**DEPARTMENT OF PSYCHIATRY - DEPARTMENT OF PEDIATRICS COLLABORATIVE STUDY**

*Lead Author: Lidija Petrovic-Dovat, M.D.*
*Co-Author(s): Nidhi Garg, M.D., Lance Feldman, M.D., Jitendra Annapareddy , M.D., Timothy Zeiger, PsyD., Tracy Fausnight , M.D., Edward O. Bixler , PhD., Marcia J Slattery,M.D.*

**SUMMARY:**

Introduction: Anxiety disorders are the most common mental health diagnoses in children and adolescents with a lifetime prevalence of 31.9% with a median age at onset of 6 years. Asthma and allergies affect one out of four Americans. In children with severe food allergies, anxiety and parental stress have been shown to negatively impact quality of life scores. Objective: The purpose of this pilot study is to examine the association of anxiety with food allergies, allergic diseases and asthma in children. We studied children in two distinct clinical populations.
Methods: This is an IRB approved, interdepartmental and interdisciplinary prospective cohort study. Patients 8-16 years of age are recruited from both the pediatric allergy clinic and the pediatric anxiety clinic at our institution. Once consent is obtained, caregivers and patients seen in the Anxiety Clinic are given a series of questionnaires and screens including the SCARED (Screen for Child Anxiety Related Emotional Disorders). Questionnaires designed by our investigators to collect data related to the food allergies and food sensitivity, eczema and asthma in patients and immediate family members are administered to the parent and to the patient. In the Allergy Clinic we are administering to both parents and children the SCARED and the Questionnaire designed by our investigators to collect data related to the diagnosis of anxiety and obsessive compulsive symptoms (OCD) in patients and immediate family members.
Results: In the pilot phase of this study we analyzed data from 26 subjects; 12 subjects were from the pediatric allergy clinic (6 with confirmed food allergies and 6 with unconfirmed) and 14 subjects have been recruited from the pediatric anxiety clinic. The average age is 12.2 years and the sample is 50% male. In the Anxiety clinic subjects, 5/14 subjects reported history of food allergies or food sensitivity. All subjects who reported food allergies, food sensitivity or asthma (5 subjects) reported a history of allergies in parent or a sibling. Children with higher SCARED scores reported more allergies compared to children with lower SCARED scores. 9/14 subjects with diagnosis of Anxiety reported having a sibling, parent or both with allergies. 7/14 reported history of asthma, eczema or both.
Discussion: Early preliminary data suggest that subjects in the Anxiety clinic appear to have a higher association with asthma and allergic diseases as compared to historical data in a general pediatric population. Ongoing patient accrual and additional studies will be performed in order to confirm these results and determine if children with food allergies should be routinely screened for anxiety and referred and treated accordingly. Also, we plan to evaluate whether our brief questionnaires that we designed, if used in allergy clinic could aid in early identification of patients at risk for anxiety disorders who should be referred for further assessment and treatment.

**NO. 79**

**DISCOVERY OF PREVIOUSLY UNDETECTED INTELLECTUAL DISABILITY: A STUDY OF CONSECUTIVELY REFERRED CHILD AND ADOLESCENT PSYCHIATRIC INPATIENTS**

*Lead Author: David L. Pogge, Ph.D.*
*Co-Author(s): Martin Buccolo, Ph.D., Steven Pappalardo, B.A., John Stokes, Ph.D., Philip D. Harvey, Ph.D.*

**SUMMARY:**

Intellectual disability is associated with an increased risk of behavioral disturbances and is a complicating factor in all forms of mental health treatment. Despite increases in the sophistication of medical detection of early risk for intellectual disability, there are remarkably few published data concerning the detection of intellectual disability in cases referred for psychiatric treatment. In this study, we used a 10-year sample of 23,629 consecutive child and adolescent admissions (ages between 6 and 17) to inpatient psychiatric treatment. Eleven

percent (n=2621) of these cases were referred for psychological assessment and were examined with a general measure of intellectual functioning (i.e., WISC-IV). Of these cases, 16% had Full Scale IQs below 70. The index score with the lowest proportion of cases with scores below 70 was Perceptual Reasoning (9.5%) which is a reflection of non-verbal reasoning and abstract problem solving that is less dependent upon educational opportunity or communications skills. Of those cases whose therapists subsequently referred them for formal assessment of their adaptive functioning (i.e., ABAS-II) 81% were found to have composite scores below 70 as well. Only one of the cases whose Full Scale IQ was less than 70 had a diagnosis of intellectual disability at the time of referral. Cases with previously undetected intellectual disability were found to be significantly more likely to have a diagnosis of a psychotic disorder and less likely to have a diagnosis of mood disorder than cases with IQs over 70. Disruptive behavior disorder diagnoses did not differ as a function of intellectual performance. These data suggest that there is a high rate of undetected intellectual disability in cases with a psychiatric condition serious enough to require hospitalization and this raises the possibility that many such cases may be receiving treatments that are appropriate for persons at this intellectual level.

**NO. 80**

**AN OVERVIEW OF THE CLINICAL RELATIONSHIP BETWEEN ANTIPSYCHOTICS AND PROLACTIN LEVELS IN CHILDREN: A LITERATURE REVIEW**

*Lead Author: Doug Taylor, B.S.*
*Co-Author(s): Susan Martin, Ph.D., Philip Sjostedt, BPharm*

**SUMMARY:**
Introduction: Prolactin regulation is a highly complex biochemical process affected by several factors, including neurotransmitter systems, hormones, pulsatile secretion, and physiological stimuli. The relationship between both conventional and atypical antipsychotics and prolactin levels has been established in recent years. A consensus has emerged that D2 receptor inhibition brought about by antipsychotics increases prolactin levels, which typically stabilize to normal or upper limit of normal (ULN) after several weeks of treatment, though the duration and scale of these changes are drug dependent. Hyperprolactinemia is common in patients taking antipsychotics, though wide variability exists between compounds. Children may be more susceptible to the effects on hyperprolactinemia than adults due to prolactin's effects on growth, sexual development, and bone formation. However, the clinical implications of changes in prolactin levels remain unclear, particularly in children treated with antipsychotics.
Methods: A systematic literature search of PubMed, Embase, and OVID was performed using terms related to conventional and atypical antipsychotics, prolactin, and hyperprolactinema. Initial searches included adults and children, with the search later narrowed to only include children (ages 5-18). A total of 31 articles were identified and reviewed.
Results: Prevalence of elevated serum prolactin levels varies considerably between antipsychotics. Risperidone-induced prolactin elevations were transient and not clinically significant. Quetiapine, clozapine, and aripiprazole had limited effect on prolactin levels. Moderate and transient prolactin increases were noted in placebo-controlled studies for olanzapine and ziprasidone. Overall, the propensity of atypical antipsychotics to induce hyperprolactinemia has emerged. The new compounds aripiprazole and quetiapine have limited incidence of elevated prolactin among adolescents and children while risperidone, olanzapine, and haloperidol studies report higher prolactin levels among this patient population. There is limited and inconsistent evidence to suggest childhood hyperprolactinemia corresponds to an increase in pituitary carcinomas.
Conclusion: Children treated with antipsychotics may be at greater risk for hyperprolactinemia and the impact of this side effect may be more pronounced in young patients' growth, particularly sexual development. Clinicians are advised to monitor serum prolactin levels in pediatric patients taking antipsychotics and adjust dosing or regimen accordingly. Newer atypical antipsychotics demonstrate a muted effect on serum prolactin levels and may therefore decrease the risk for hyperprolactinemia among children. The long-term effects of antipsychotic treatment on prolactin dependent physiological processes in children remain unclear and represent an opportunity for future research.

**NO. 81**

**WHAT PREDICTS WHO WILL ATTEND PERINATAL DEPRESSION MENTAL HEALTH APPOINTMENTS IN CLEVELAND?**

*Lead Author: Avril S. Albaugh, M.S.W.*
*Co-Author(s): Susan Hatters-Friedman, MD, Sarah Nagle-Yang, MD, Miriam Rosenthal, MD*

**SUMMARY:**
Objective: Multiple barriers exist for women attending perinatal psychiatric appointments, including both external barriers and stigma issues. This study sought to identify characteristics of pregnant and postpartum women which were associated with attending a psychiatric intake visit, after the women had been identified at risk for perinatal depression by a health care provider and had accepted a referral to one of the four perinatal mental health agencies in Cleveland.
Method: In this retrospective study, data was collected via the Maternal Behavioral Health Referral form that the four perinatal mental health agencies received from referring community/health care providers regarding clients identified at risk for perinatal depression. Data collected included: Age, Zip Code, Marital Status, Pregnant or Postpartum Status, Infant's age, reason for referral, Edinburgh Postnatal Depression Scale score, Suicidal risk/homicidal risk, Medications, Perinatal Mental Health Agency site, and whether or not the Intake visit was completed.
Results: Half of the 647 women who had accepted perinatal mental health referrals attended an intake appointment. Women were more likely to participate in an intake if in-home services were offered. ($p<0.01$) Those with a history of perinatal loss and those who were self-referred had a trend of being more likely to attend. ($p<0.1$) Those with lower income were also more likely to attend. ($p<0.05$)
Conclusion: Even among women who accepted referrals to mental health services after screening at risk for perinatal depression, only half attended intake appointments. For this group experiencing multiple barriers, in home mental health services were most likely to be accepted and followed through with, which has important implications for service delivery.

**NO. 82**

**TREATMENT AUGMENTATION OF MONO-THERAPY IN ADULT PATIENTS WITH MAJOR DEPRESSIVE DISORDER: EVIDENCE FROM PRIVATELY-INSURED U.S. ADULTS**

*Lead Author: Omid Ameli, M.D., M.P.H.*
*Co-Author(s): Rene S. Saucedo, M.D., MSc, Eric G. Smith, M.D., MPH, Howard J. Cabral, PhD, MPH, Marina Soley Bori, MA, PhDc, Lewis E. Kazis, Sc.D.*

**SUMMARY:**
Background: Up to two thirds of adults diagnosed with Major Depressive Disorder (MDD) do not respond to first-line mono-therapy with an antidepressant and are candidates for augmentation of therapy. However, evidence of the clinical determinants of treatment augmentation is limited.
Objective: To compare the time to event of treatment augmentation after risk adjustment in patients who initiated their medication therapy for MDD.
Design: Retrospective longitudinal analysis of 214,705 adult patients between the age of 18 and 64 who were diagnosed with major depressive disorder during 2009. The data was extracted from the Thomson Reuters MarketScan® Commercial Claims and Encounters Database incorporating clinical and medication claims of over thirty million individuals with private insurance in the US.
Main Measures: Treatment augmentation was defined as concurrent use of a second antidepressant, thyroid hormone, a stimulant, a mood stabilizer, or a second-generation anti-psychotic (SGA) for at least 30 days. The time to treatment augmentation was defined as the interval in days between the initiation date and the date when augmentation occurred. Initial class of mono-therapy was the main independent variable. Risk adjustment included proxies for MDD severity, physical comorbidities, healthcare provider type, type of insurance coverage, demographic characteristics and region of residence. Cox proportional hazard models were used to examine the association between the co-variates and the time to treatment augmentation.
Results: Compared to SSRIs, use of SGAs as the initial treatment of choice was associated with a statistically significant higher hazard rate for treatment augmentation compared to other classes (HR=2.59, 95% CI: 2.51 - 2.68). The other classes of medication modeled also had a higher hazard rate for treatment augmentation, but smaller compared to SGAs. The hazard rates remained stable across partially and fully adjusted models. The type of healthcare provider was also a significant predictor of treatment augmentation. Mental health specialists had a 27% higher hazard rate of treatment augmentation compared to generalist physicians (HR 95% CI: 1.25 - 1.30). The hazard rate of augmentation by provider type varied with the severity of the initial diagnosis. Compared to mental health specialists, generalists were most conservative towards treatment augmentation when treating mild and moderate cases of MDD (HR=0.76, 95% CI: 0.74 - 0.77) and less conservative when treating severe cases (HR=0.94, 95% CI: 0.90 - 0.99).
Conclusion: Initial mono-therapy prescription appears to be the main factor of treatment augmentation among adults with MDD after risk adjustment. Generalists are less likely than mental health specialists to augment the initial mono-therapy, suggesting physician inertia among generalists and the need for clearer clinical guidelines in primary care setting.

**NO. 83**

**VORTIOXETINE: EXPLORATORY ANALYSIS OF THE RELATION BETWEEN TARGET ENGAGEMENT AND INTEGRATED CLINICAL DATABASE ANALYSIS OF SINGLE MADRS SCALE ITEMS**

*Lead Author: Johan Areberg, Ph.D.*
*Co-Author(s): Atul R. Mahableshwarkar, M.D., Connie Sánchez Ph.D.*

**SUMMARY:**
Objective: Vortioxetine is a multimodal-acting antidepressant working through several serotonergic targets. It is a 5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist and inhibitor of the 5-HT transporter (SERT) in vitro. Vortioxetine exerts antidepressant- and anxiolytic-like effects and reverses memory deficits in preclinical models.1-3 The lack of clinically validated binding ligands for all of vortioxetine's molecular targets except the SERT led us to develop preclinical assays to establish the relation between dose and target engagement. Here we explore the relation between vortioxetine's clinically and pre-clinically determined target occupancies and antidepressant response measured by an analysis of single items of the MADRS scale.
Methods: Target occupancy for the 5-HT1A, 5-HT1B, 5-HT3 and 5-HT7 receptors and the 5-HT transporter (SERT) was measured in the rat brain by ex vivo autoradiography. SERT binding in the human brain was measured using the PET-ligands [11C]-MADAM and [11C]-DASB.4 Clinical efficacy data for single items of the MADRS scale, for vortioxetine 5-, 10- and 20-mg doses, were obtained from an integrated clinical database of 9 short-term MDD studies. Pre-clinically determined SERT occupancy were used to bridge to the clinically determined SERT occupancy and plasma exposure of the doses applied in the clinical studies.
Results: The human PET studies demonstrated increased SERT occupancy with increasing vortioxetine dose. At the clinically efficacious dose of 5 mg, SERT inhibition was about 50%, indicating involvement of 5-HT receptors, since SSRI efficacy requires approximately 80% SERT inhibition.5 Using SERT inhibition to bridge preclinical and clinical data, occupancy of the 5-HT1A, 5-HT1B, 5-HT3 and 5-HT7 receptors in humans is discussed for the 5-, 10- and 20-mg doses. For 5 mg, the preclinical data predict that primarily SERT and 5-HT3 receptors are occupied, while at 20 mg all targets (5-HT3, 5-H7, 5-HT1D, 5-HT1B, 5-HT1A and SERT) are predicted to be occupied at functionally relevant levels. MADRS single-item data from the integrated clinical database illustrated a clear dose-response relationship for 9 of the 10 items.
Conclusions: The present study suggests not only a quantitative but also a qualitative increase of target engagement over the clinical dose range, i.e., mainly 5-HT3 receptors and SERT are occupied at 5 mg, with functionally relevant occupancy at all targets at 20 mg vortioxetine. We hypothesize that the clear relation between clinical efficacy and dose can be ascribed to this gradually increasing target engagement.

**NO. 84**

**TREATING MAJOR DEPRESSIVE DISORDER WITH LEVOMILNACIPRAN ER: EFFICACY AND TOLERABILITY ACROSS THE DOSE RANGE**

*Lead Author: Greg Asnis, M.D.*

*Co-Author(s): Changzheng Chen, Ph.D.; Carl Gommoll, MS; William M. Greenberg, M.D.*

**SUMMARY:**
Objective: Levomilnacipran is a potent and selective serotonin and norepinephrine reuptake inhibitor (SNRI) with greater potency for inhibiting the norepinephrine transporter relative to the serotonin transporter. Post hoc analyses of a positive fixed-dose Phase III trial (NCT00969709) were conducted to assess the relationships of levomilnacipran extended-release (ER) dose with efficacy and tolerability in adult patients with major depressive disorder (MDD).
Methods: An 8-week, double-blind, multicenter, parallel-group, placebo-controlled, fixed-dose study in patients aged 18-65 years who met DSM-IV-TR criteria for MDD was conducted in patients with a current major depressive episode ≥8 weeks and a score of ≥30 on the Montgomery-Åsberg Depression Rating Scale (MADRS). Following a 1-week single-blind, placebo lead-in, patients were randomized to placebo (n=179) or once-daily levomilnacipran ER 40 mg (n=181), 80 mg (n=181), or 120 mg (n=183) initiated at 20-mg and titrated to the target dose over 7 days. Change from baseline to the end of Week 8 on the MADRS total score (primary efficacy measure) and Sheehan Disability Scale (SDS) total score (secondary efficacy measure) were analyzed using a mixed-effects model for repeated measures (MMRM) approach on the intent-to-treat (ITT) population. To evaluate the relationship of dose with efficacy, an MMRM approach was used to determine the least squares mean difference (LSMD) between each dose of levomilnacipran ER versus placebo; additional analyses evaluated the MADRS LSMD versus placebo in each dose group in patients with more severe depression at baseline (MADRS ≥35). The percentage of patients with treatment-emergent adverse events (TEAEs) was calculated for each group to evaluate tolerability.
Results: The LSMD versus placebo for MADRS total score change from baseline was significantly superior for all levomilnacipran ER dose groups: 40 mg, -3.23 (P=.0186), 80 mg, -3.99 (P=.0038), 120 mg, -4.86 (P=.0005). On the SDS, the LSMD versus placebo for levomilnacipran ER 40 mg, 80 mg, and 120 mg was -1.41 (P=.1687), -2.51 (P=.0151) and -2.57 (P=.0141), respectively. In patients with MADRS ≥35, the LSMD versus placebo for levomilnacipran ER 40 mg, 80 mg, and 120 mg was -3.805 (P=.0558), -5.138 (P=.0098), and 6.207 (P=.0016), respectively. In contrast, the percentage of patients with TEAEs was similar across dose groups: levomilnacipran ER 40 mg (76%), 80 mg (83%), 120 mg (77%). The only TEAEs associated with higher doses of levomilnacipran ER were urinary hesitation and erectile dysfunction.
Conclusions: Higher doses of levomilnacipran ER were associated with greater changes from baseline in MADRS and SDS. Conversely, there was no overall increase in the incidence of TEAEs with higher doses. In summary, these results suggest that some patients, including those with more severe depression, may benefit from higher doses of levomilnacipran ER. This study was funded by Forest Laboratories, Inc.

**NO. 85**
**EFFECT OF METABOLIC SYNDROME AND THYROID HORMONE ON EFFICACY OF DESVENLAFAXINE 50 AND 100 MG/D IN MAJOR DEPRESSIVE DISORDER**
*Lead Author: Matthieu Boucher, Ph.D.*
*Co-Author(s): Rana S. Fayyad, Ph.D., Joan A. Mackell, Ph.D., Roger S. McIntyre, M.D., FRCPC*

**SUMMARY:**
Introduction: The objective of this pooled, post hoc analysis was to evaluate the efficacy of desvenlafaxine 50 mg/d and 100 mg/d vs placebo in adults with major depressive disorder (MDD) with and without metabolic syndrome (MetS) and above and below median baseline thyroid-stimulating hormone (TSH).
Methods: Adults with MDD were randomly assigned to receive fixed doses of desvenlafaxine, duloxetine (1 study), or placebo in 9 short-term, double-blind studies. Data from the desvenlafaxine 50- and 100-mg/d and placebo arms were included in the analysis. MetS was defined as meeting at least 3 of 5 criteria: 1) body mass index ≥30 kg/m2; 2) triglycerides >150 mg/dl or on triglyceride-lowering medication; 3) high-density lipoprotein (HDL) <40 mg/dl (men) or <50 mg/dl (women) or on HDL-raising medication; 4) fasting glucose >100 mg/dl; 5) systolic blood pressure (BP) >130 mmHg or diastolic BP >85 mmHg, on antihypertensive medication, or history of hypertension. The primary efficacy variable for each study, change from baseline in 17-item Hamilton Rating Scale for Depression (HAM-D17) total score, was analyzed at week 8 (last observation carried forward [LOCF]) in the post hoc analysis. Other efficacy endpoints included change from baseline in Sheehan Disability Scale and Montgomery-Asberg Depression Rating Scale total scores, Clinical Global Impression Scale-Improvement score, and rates of HAM-D17 response (≥50% reduction from baseline in HAM-D17 total score) and remission (HAM-D17 total score ≤7). Treatment effects on continuous efficacy outcomes were analyzed in 4 subgroups-MetS, no MetS, baseline TSH<median, and baseline TSH>median-using analysis of covariance with treatment, study, and baseline in the model. Categorical outcomes were analyzed using logistic regression with study in the model. MetS and TSH were examined as predictors of change in HAM-D17 total score at LOCF using regression analysis.
Results: The pooled analysis included 4279 patients; 1009 (23.6%) patients had MetS. In MetS/no MetS and TSH>median/TSH<median subgroups, HAM-D17 total scores improved significantly from baseline to week 8 (LOCF) with desvenlafaxine 50 or 100 mg/d compared with placebo (all P≤0.006). There was no significant treatment by MetS or TSH interaction. In all 4 subgroups, HAM-D17 response and remission rates at week 8 (LOCF) were significantly greater for desvenlafaxine 50 and 100 mg/d (response: 45%–52%; remission: 26%–33%) compared with placebo (response: 36%–39%; all P≤0.009; remission: 20%–22%; all P≤0.037). Neither MetS nor TSH>median predicted change in HAM-D17 total scores or HAM-D17 response or remission rates (all P>0.05).
Conclusions: Desvenlafaxine 50 and 100 mg/d significantly improved symptoms of depression compared with placebo in MDD patients with and without MetS, and in MDD patients with TSH levels above and below median TSH at baseline.

**NO. 86**
**SYMPTOM PATTERNS AMONG INTERNATIONAL MAJOR DEPRESSIVE DISORDER CLINICAL TRIALS PATIENTS**
*Lead Author: Joan Busner Ph.D., Ph.D.*
*Co-Author(s): Stuart A. Montgomery, M.D.*

**SUMMARY:**

Background. The baseline level of depressive symptoms, as measured by gold standard scales such as the Montgomery Asberg Depression Rating Scale (MADRS)1, plays an important role in allowing efficacy demonstration of antidepressants in clinical trials. Symptoms with low endorsement detract from total baseline scores and prevent demonstration of drug-related improvement. We previously examined MADRS baseline patient ratings from multiple industry sponsored MDD studies across multiple regions of the world and found Reduced Appetite and Suicidal Thoughts to be the lowest severity items endorsed2. The present study extends this work by determining the level to which these low-endorsed MADRS items correspond to total score and other MADRS items, and by determining whether such correlation patterns differ by geographic region. Method. 2224 baseline MADRS ratings were examined from patients in multiple industry sponsored MDD clinical trials across 15 countries in 4 regions: US (N=1624), Asia (N=184), Eastern Europe (N=197), Western Europe (N=219). As previously described, MADRS items were examined by region for overall severity using MANOVA, and for proportions of low endorsement (scores of 0 or 1) using chi-square ($\chi 2$), with effect sizes determined by $\eta 2$ and Cramer's V statistics2. In the present study, to determine the level to which the identified low severity items corresponded to overall MADRS total score severity across regions, we computed item-total correlations, inter-items correlations, and alpha-if-item-deleted statistics within and across global regions for the 2444 baseline 10-item MADRS scores. Results. The MADRS items with the lowest correlations with the MADRS total score (TS) were Suicidal Thoughts (ST) and Reduced Appetite (RA) (respective r's=0.14 and 0.15). The item with the highest correlation with the MADRS TS was Reported Sadness (r=0.41) (all p's < .01). Within each region, the item with the greatest correlation with TS was Reported Sadness (r's .29 to .52). Internal consistency of the overall baseline MADRS scores (Cronbach's alpha=0.56) was consistent with reports from other international samples3; within each region, ST and RA detracted most from overall consistency, as indicated in alpha-if-item deleted analyses. Conclusions. 1) The findings extend what is understood about MDD patients entering international clinical trials. 2) Reported Sadness had the highest item-total correlation and accounted for 22% of the variance of all other items. 3) ST and RA had the lowest item-total correlations; this is consistent with earlier findings among US patients4. 5) Low levels of ST may be reflective of trial inclusion criteria; low levels of the melancholic depression symptom, RA, are more likely reflective of actual symptom prevalence. 6) ST and RA have been associated with lower treatment effect sizes relative to other MADRS items in 2 US studies5; our findings raise the possibility of similar occurrences in international MDD trials.

**NO. 87**

**THE EFFICACY OF VILAZODONE IN ACHIEVING REMISSION IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: POST HOC ANALYSES OF A PHASE IV TRIAL**

*Lead Author: Leslie Citrome, M.D., M.P.H.*
*Co-Author(s): Carl Gommoll, M.Sc., Maju Mathews, M.D., Rene Nunez, M.D., Xiongwen Tang, Ph.D.*

**SUMMARY:**

Introduction: While treatment response is the initial aim of therapy in major depressive disorder (MDD), disease remission is the ultimate goal. Symptom remission relative to response is associated with greater function, increased quality of life, and reduced risk of MDD relapse and recurrence. Antidepressant medications that can help patients achieve remission are an important component of MDD treatment.

Vilazodone, a serotonin reuptake inhibitor and 5-HT1A receptor partial agonist, is approved by the US Food and Drug Administration for the treatment of MDD in adults. We evaluated the efficacy of vilazodone in achieving disease remission using various criteria.

Methods: A post hoc analysis of response and remission data from a Phase IV, multicenter, randomized, 8-week double-blind, fixed-dose study (NCT01473394) comparing vilazodone 40 mg/day with placebo. The study comprised outpatients aged 18 to 70 years with DSM-IV-TR–defined MDD and a baseline total score ≥26 on the Montgomery-Asberg Depression Rating Scale (MADRS). The primary efficacy outcome was change from baseline to Week 8 in MADRS score; secondary and additional efficacy outcomes included the Clinical Global Impressions-Severity (CGI-S) and Hamilton Anxiety Rating Scale (HAMA). Post hoc analyses evaluated the percent of patients achieving depression symptom remission (MADRS≤10), complete remission (MADRS≤5), anxiety symptom remission (HAMA≤7), and combined depression/anxiety symptom remission (MADRS≤10 + HAMA≤7). Overall disease remission was also assessed (CGI-S=1). Additional analyses evaluated outcomes in patients with greater depression severity (baseline MADRS ≥30). Odds ratios (OR) and number needed to treat (NNT) were determined.

Results: The intent-to-treat (ITT) population comprised 252 placebo and 253 vilazodone patients. At Week 8, a significantly greater percentage of vilazodone patients compared with placebo patients achieved MADRS remission (34% vs 22%; OR=1.82; P<.01; NNT=9) and complete remission (18% vs 8%; OR=2.42; P<.01; NNT=10). A greater proportion of vilazodone patients relative to placebo patients met criteria for HAMA remission (49% vs 35%; OR=1.82; P<.01) and combined MADRS/HAMA remission (32% vs 20%; OR=1.84; P<.01). These results were supported by higher rates of overall disease remission as assessed by CGI-S (24% vs 12%; OR=2.41; P<.001). In patients with greater baseline depression severity (MADRS≥30), statistically significant results were seen on all remission outcome assessments for vilazodone vs placebo (P<.01, all outcomes), with larger ORs relative to the overall population (OR range: 1.92-3.46).

Conclusions: These post hoc analyses suggest that vilazodone 40 mg/day is effective in achieving depression and anxiety symptom remission in adult patients with MDD. The remission benefits of vilazodone were seen in both the overall MDD population and those patients with greater severity of depression. This study was funded by Forest Laboratories, Inc.

**NO. 88**

**CLINICAL RELEVANCE OF LEVOMILNACIPRAN ER TREATMENT IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: IMPROVEMENTS IN FUNCTIONAL IMPAIRMENT CATEGORIES**

*Lead Author: Andrew J. Cutler, M.D.*
*Co-Author(s): Changzheng Chen, Ph.D.; Carl Gommoll, M.S.; William M. Greenberg, M.D.; Adam Ruth, Ph.D.*

**SUMMARY:**
Introduction: Major depressive disorder (MDD) is associated with impaired functioning at work and home, and social isolation. Residual functional impairment is common after antidepressant treatment and increases disability and risk of relapse. Medications that improve functional impairment associated with depression may play an important role in the management of MDD.
Levomilnacipran extended-release (ER), a potent and selective serotonin and norepinephrine reuptake inhibitor, is FDA-approved for the treatment of MDD in adults. In phase II/III studies, functional impairment in MDD patients was assessed using the Sheehan Disability Scale (SDS). A previous analysis of these studies showed significantly greater mean improvements in functional impairment for levomilnacipran ER vs placebo on all 3 SDS Items (representing domains of Work, Social Life, and Family/Home). This post hoc analysis explores shifts from greater severity of functional impairment at baseline to less severity at end of treatment (EOT) in patients treated with levomilnacipran ER vs placebo.
Methods: Data were pooled from 2 fixed- and 3 flexible-dose randomized, double-blind, placebo-controlled trials of 8 or 10 weeks' duration of levomilnacipran ER 40-120 mg/day vs placebo in adult patients with MDD.
Proportions of patients that shifted from moderate-to-high baseline impairment (score ≥4) to mild-to-no impairment (score ≤3) at EOT were assessed for each SDS item. Proportions of patients shifting from marked-to-high (score ≥7) at baseline to moderate-to-no (score ≤6) impairment at EOT also were assessed.
Results: More levomilnacipran ER vs placebo patients achieved categorical SDS improvement. On the Work Item, a greater percentage of levomilnacipran ER vs placebo patients improved from moderate-to-high baseline impairment (≥4) to mild-to-no impairment (≤3) at EOT (55% vs 40%, odds ratio [OR]=1.96, P<.0001); more levomilnacipran ER vs placebo patients with marked-to-high baseline impairment (≥7) had moderate-to-no (≤6) impairment at EOT (73% vs 64%, OR=1.81, P<.0001). On the Social Item, higher proportions of levomilnacipran ER vs placebo patients improved from moderate-to-high impairment at baseline to mild-to-no impairment at EOT (48% vs 37%, OR=1.73, P<.0001), and from marked-to-high impairment at baseline to moderate-to-no impairment at EOT (68% vs 59%, OR=1.61, P<.0001). On the Family/Home Item, greater percentages of levomilnacipran ER patients relative to placebo shifted from moderate-to-severe impairment at baseline to mild-to-no impairment at EOT (51% vs 39%, OR=1.72, P<.0001), and from marked-to-high impairment at baseline to moderate-to-no impairment at EOT (73% vs 65%, OR=1.47, P=.0027).
Conclusions: These results suggest that in adult patients with MDD, levomilnacipran ER treatment is associated with greater improvements than placebo across all SDS-measured functional domains of work, social, and family/home life. Funded by Forest Laboratories, Inc.

**NO. 89**

**ASSESSING THE STRESS PERCEIVED BY CAREGIVERS OF PATIENTS WITH MAJOR DEPRESSIVE EPISODE: DIFFERENCES BETWEEN MAJOR DEPRESSION AND BIPOLAR DISORDER**

*Lead Author: Bernardo Dell'Osso, M.D.*
*Co-Author(s): A.Carlo Altamura, M.D., Chiara Arici, M.D., Cristina Dobrea, M.D., Lucio Oldani, M.D., Marta Serati, M.D.*

**SUMMARY:**
Introduction
Affective disorders are highly disabling conditions, posing a considerable degree of burden on patients' caregivers and an overall impaired quality of life. The burden comprises several areas such as financial costs and physical care of the patient, affects the personal freedom and leisure activities and influences the course of illness.
Caregivers can develop, in turn, stress, depression and anxiety and be, therefore, eligible for an early screening and specific tailored intervention.
Due to the paucity of available data in the field, the present study was aimed to assess the distress perceived by caregivers of patients with Bipolar Disorder (BD) vs Major Depressive Disorder (MDD), in relation to depressive phases.
Methods
A sample of 52 patients with current Major Depressive Episode (MDE) (24 affected by MDD and 28 by BD) and their caregivers were recruited. Main clinical and demographic variables were collected. Psychometric scales were administered in order to evaluate patients' overall level of functioning (e.g., Sheehan Disability Scale, SDS) and caregivers' level of distress (e.g., Zarit Burden Interview, ZBI). A statistical analysis with one-way ANOVA for independent groups and linear regression was performed, in order to assess the differences between the two diagnostic groups, as well as a possible correlation between caregivers' distress and patients' social, demographic and clinical data.
Results
The statistical analysis with one-way ANOVA showed significant differences between MDD and BD groups. These results are in line with literature data and consist of an earlier age of onset (t=2.587; p=0.013), shorter duration of untreated illness (t=-2.084; p=0.042), higher total number of episodes (t=-2.700; p=0.010), higher number of episodes in the last year (t=-1.721; p=0.003), and higher total number of hospitalizations (t=-2.045; p=0.046) for BD vs MDD. With regard to psychological and physical burden experimented by the caregivers, a statistically significant difference was found between the two diagnostic groups for the factor "role strain" of the ZBI (t=-2.156; p=0.036), higher for the caregivers of BD vs MDD patients.
A similar trend was observed for the overall score of the ZBI (p=0.076).
The linear regression showed a statistically significant correlation between caregivers' burden and the number of hospitalizations in the last year (t=2.464; p=0.017) in the total sample.
Conclusions
The burden perceived by caregivers of patients with MDE seems to depend on the diagnostic group (MDD vs BD). Other clinical parameters, such as the number of hospitalizations in the last year, seem to be useful prognostic tools to predict the disability of those who assist patients with affective disorders. Present preliminary data need to be corroborated by further analyses conducted on larger samples, with the aim to identify depressed patients' variables predicting the degree of burden in their caregivers.

**NO. 90**

**A RANDOMIZED PILOT STUDY OF MAINTENANCE NEUROSTAR**

**TRANSCRANIAL MAGNETIC STIMULATION (TMS) IN PATIENTS WITH MAJOR DEPRESSION: INTERIM ANALYSIS**

*Lead Author: Mark A. Demitrack, M.D.*
*Co-Author(s): Scott T. Aaronson, M.D., David G. Brock, M.D., Sheila M. Dowd, Ph.D., Walter J. Duffy, M.D., David L. Dunner, M.D., Mark S. George, M.D., Noah S. Philip, M.D.*

**SUMMARY:**
Background: Transcranial magnetic stimulation (TMS) is efficacious as an acute treatment for patients with major depressive disorder (MDD), however the ideal long-term TMS maintenance strategy has not been defined. The purpose of this study is to provide preliminary information regarding the durability of long-term symptom relief after acute TMS administration comparing two different maintenance treatment regimens in medication-free patients.
Methods: Patients with a primary diagnosis of unipolar, non-psychotic MDD, who had failed to receive benefit from prior antidepressant treatment, participated in a randomized, open-label, multisite trial. Patients meeting criteria (HAMD17 25 % improvement) at the end of a fixed six-week acute NeuroStar TMS treatment course were randomized to two maintenance regimens: (A) once monthly maintenance TMS treatments or (B) monthly observation. Patients in either arm received a TMS reintroduction course for protocol defined symptomatic worsening (HAMD17 ≥ 16 and worsening ≥ 25 %). Clinical assessments were done at baseline, end of acute treatment and every four weeks during follow-up. The primary outcome for this prespecified interim analysis is the proportion of patients without symptomatic worsening throughout 3 months of the maintenance treatment phase, between groups A and B. Secondary outcomes were average time to first reintroduction of TMS and change in depressive symptomatology across the maintenance phase.
Results: Sixty seven medication-free patients were enrolled, 49 patients were randomized (23 A, 26 B), and 32 patients (16 A, 16 B) met evaluable criteria at 21 weeks. Patients were well matched for age and baseline disease severity. Of the 67 enrolled patients, 41 met remission criteria (HAMD17< 8) at end of acute treatment (61.2%); of the 32 randomized patients 29 (90.6%) met remission criteria. At the 3-month assessment, 10/16 patients (62.5%) vs. 7/16 patients (43.8%) did not experience symptomatic worsening in arm A and B, respectively (P=NS). Mean (SD) HAMD17 at 3- months was 8.3 (4.6) and 10.9 (7.1) for arm A and B, respectively. The mean (SD) time to TMS reintroduction was 59.7 (29.4) and 71.2 (20.8) days from entry into the maintenance phase in arm A and B, respectively.
Conclusions: A 6-week course of NeuroStar TMS treatment induced remission in 61.2% of all enrolled patients. Overall, there was a good durability of effect of TMS therapy over 3 months in a medication free population regardless of maintenance regimen. At this interim analysis, a non-significant trend towards improved outcome was shown with once monthly maintenance TMS regimen through 3 months of follow-up.

**NO. 91**

**EFFICACY COMPARISON OF TMS AND ANTIDEPRESSANT DRUGS IN THE TREATMENT OF MAJOR DEPRESSION**

*Lead Author: Mark A. Demitrack, M.D.*
*Co-Author(s): Dafna Bonneh-Barkay, PhD, David G. Brock, MD, Ziad Nahas, MD, Annie N. Simpson, PhD, Kit N. Simpson, PhD, Angela Waltman*

**SUMMARY:**
Background: Transcranial magnetic stimulation (TMS) is a safe and effective antidepressant treatment for those unable to benefit from initial antidepressant medication. A recent, large multisite study of acute TMS treatment in clinical practice showed a significant reduction in depression scores at the conclusion of acute treatment (Carpenter, et al., 2012). In this study, propensity score matching method was used to create a pseudo-randomized comparison between TMS patients and patients enrolled in the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study in order to compare their acute efficacy.
Methods: Three hundred and six patients treated with NeuroStar TMS Therapy were matched to STAR*D patients based on their baseline characteristics. Propensity score matching was performed using a greedy algorithm. A logistic regression model was used for constructing propensity scores, and 1:1 matching was achieved in both a forward matching manner and again using a more conservative method of reverse matching, the latter achieved by creating a revised baseline for each of the STAR*D patients using the QIDS-SR value observed from the start of the patient's final level in which they were treated in the STAR*D study. Data from the matched populations were analyzed to estimate the weekly failure and improvement rates. Clinical outcomes were classified into four depression health states based on QIDS-SR score.
Results: Following propensity score matching the STAR*D study and TMS patients did not differ on demographic and clinical features. The absolute differences in the means of each of the variables of importance in the two groups were below the acceptable cutoff of 0.25, which indicated good comparability of the groups. Following forward matching the mean (SD) 6 weeks QIDS-SR scores were 10.36 (6.18) and 12.97 (6.94) for the TMS and STAR*D matched populations, respectively ($p<0.0001$). Comparison based on categorical outcomes using the QIDS-SR definitions for none (0-5), mild (6-10), moderate (11-15) or moderate to severe (16-27) depression showed that the TMS group had a greater clinical improvement at 6 weeks ($P<0.0001$) compared to the STAR*D population. Either treatment increased the proportion of patients reporting no or mild depression after 6 weeks; however, the improvement observed in patients treated with TMS was greater than the improvement observed among the STAR*D patients (53% of TMS patients and 38% of STAR*D study patients (P=0.0023) were in the no or mild depression category after 6 weeks).
Conclusion: Among a propensity-score matched population of patients who had failed to benefit from initial antidepressant medication, TMS results in a greater proportion of patients achieving clinically and statistically meaningful levels of improvement at the end of 6 weeks compared to patients treated with conventional medication therapy.

**NO. 92**

**BIPOLAR I AND II VERSUS UNIPOLAR DEPRESSION: DISTINGUISHING FEATURES AND SUICIDAL BEHAVIOR**

*Lead Author: Kanita Dervic, M.D.*
*Co-Author(s): David A. Brent, M.D., Margarita Garcia-Amador, M.D., Jill M. Harkavy-Friedman, Ph.D., J. John Mann, M.D., ,Maria A. Oquendo, M.D.*

**SUMMARY:**
BACKGROUND: The phenomenology of depression in major depressive disorder (MDD) and bipolar disorder (BP) is a subject of continuous research interest. Differentiating bipolar from unipolar disorder has consequences for treatment, and several specific characteristics of the depressive episode in context of both disorders have been reported. We investigated distinguishing features between bipolar I, II and unipolar depression, including trait characteristics and suicidal behavior, in a large clinical sample.
METHODS: Six-hundred eighty-five (n=685) patients in a Major Depressive Episode with lifetime Unipolar (UP) depression (n=455), Bipolar I (BP-I) disorder (n=151), and Bipolar II (BP-II) (n=79) disorder were compared in terms of their socio-demographic and clinical characteristics.
RESULTS: Compared to unipolar, BP-I and BP-II depressed patients had significantly more often the onset of their first depressive episode before the age of 15, had more previous affective episodes, more first and second-degree relatives with history of mania, and received psychopharmacological and psychotherapy treatment at an earlier age. Furthermore, they had comparably more current psychotic and subsyndromal manic symptoms, more co-morbid Cluster A and B Personality Disorders, alcohol and substance abuse/dependence. In terms of trait characteristics, BP-I and BP-II depressed patients had significantly higher life-time impulsivity, aggression, and hostility scores. The three groups did not significantly differ in terms of the prevalence of suicidal ideation and attempts. Whereas the three groups did not differ on other socio-demographic variables, BP-I patients were significantly more often unemployed that UP patients.
CONCLUSIONS: Our study replicated major previous findings on differences between bipolar and unipolar depression. In addition, bipolar patients had more aggression/hostility and impulsivity than unipolar. Concurrent with previous clinical studies, no difference in terms of suicidal behavior was found.

**NO. 93**
**PSYCHOPATHOLOGY IN ELITE ATHLETES**
*Lead Author: Ezequiel F. Di Stasio, M.D.*
*Co-Author(s): Jorge L. Castroman, M.D., Raquel Alvarez, M.D., Antonio Ceverino, M.D., Miguel A. González, M.D., Margarita Pérez, M.D., Jose M. Padilla, M.D., Maria L. Martín, M.D., Enrique Baca, M.D.*

**SUMMARY:**
INTRODUCTION
The social and media relevance subjects elite athletes to a high level of demand, which may predispose them to psychopathological disorders, arising from fear of failure, anticipatory anxiety, etc.. Sports Psychiatry currently plays an essential role in both athletic performance and personal well-being of these individuals. This study aims to: 1. Describe the sociodemographic, sportive and psychopathological features of an elite athletes sample 2. Compare the subgroup of symptomatic athletes with the rest of the sample.
METHODS
In a sample of 112 professional athletes, we administered an own questionnaire about sociodemographic variables, the Beck Depression Inventory (BDI), the Baron Depression Scale for Athletes, the Survey of the State-Trait Anxiety Inventory (STAI), Adult Attention Deficit Disorder and Hyperactivity Self-Report Scale V1.1. (ASRS). According to BDI two subgroups were generated, the "A" met the criteria of depression, and the "B" did not meet them. We compared sociodemographic and sportive variables, and the results of the scales between groups.
RESULTS
According to BDI 91 athletes were in range of "no depression", 16 in "mild depression", 2 in "moderate depression" and 1 in "severe depression". 15 athletes scored above the cutoff for the ASRS, and 6 athletes for the subscale state anxiety (STAI-S). No sociodemographic differences were found between groups, except for the history of mental health consultations, more frequent in group A. This group had higher scores on BDSA, ASRS, and STAI.
CONCLUSION
Professional athletes may be a population with increased risk of anxiety and depression symptoms. This make us think about the role of Psychiatry in detecting predisposing factors. For the detection of affective disorders, scales such as those employed in this study can be used, including those as Baron scale which are specific to athletes. Early detection of symptoms of anxiety or depression would allow an early approach and potentially contribute to improve the quality of life of the athlete, both personally and professionally. Further studies are needed to characterize more accurately the risk of mental disorders in this group.

**NO. 94**
**PREVALENCE AND FREQUENCY OF RESIDUAL SYMPTOMS OF DEPRESSION IN U.S. ADULTS**
*Lead Author: Bryan Dirks, M.D.*
*Co-Author(s): Nicole Cossrow, M.P.H, Ph.D., Hillary Gross, M.P.H, Manisha Madhoo, M.D., Edward A. Witt, Ph.D.*

**SUMMARY:**
Introduction: Patients with depression who receive antidepressant (AD) treatment often do not achieve complete remission of depressive symptoms. Even among those who achieve symptomatic remission, the majority have residual symptoms that result in functional impairment. This study describes the prevalence of residual symptoms in those with AD-treated depression in a representative sample of US adults.
Hypothesis: Patients with AD-treated depression continue to experience residual symptoms despite adequate duration of treatment.
Methods: The data are from the 2012 National Health and Wellness Survey (NHWS), a representative, cross-sectional general health survey of 71,157 US adults, projected to represent 230.3 M people. Results were weighted to reflect the sex, age, ethnicity, and educational make-up of the US population. After excluding participants with schizophrenia or bipolar disorder, 8,873 (12.5%) reported that a doctor had diagnosed them with depression, including 5,354 respondents taking AD medication for at least the 3 months preceding the survey (DEP-RX), representing 17.3 M people. The frequency of self-reported depressive symptoms (defined by PHQ-9 items) was assessed. Within DEP-RX patients, these are considered residual symptoms.
Results: Despite adequate AD treatment duration, 26.9% of DEP-RX patients, projected to represent 4.7 M US adults, still met PHQ-9 criteria for major depressive disorder. The two most

commonly reported residual symptoms were "feeling tired or having little energy" (50.7% of DEP-RX vs. 21.2% of total population) and "trouble falling or staying asleep, or sleeping too much" (44.3% of DEP-RX vs. 19.9% of total population). Among DEP-RX patients, both decreased energy and sleep disturbance symptoms were more common among women than men (52.3% vs. 48.4%, $p < 0.05$ and 45.0% vs. 43.1%, $p < 0.05$, respectively). When asked to rate their general health on a scale from 1 = "Poor" to 5 = "Excellent", DEP-RX patients had a significantly lower average rating (mean = 2.86, SD = 0.97) than those in the general adult population without schizophrenia, bipolar disorder or AD treated depression (mean = 3.45, SD = 0.92) ($p < 0.05$).
Discussion: Despite AD treatment of at least 3 months' duration, patients with depression in a nationally representative sample of adults continue to experience residual symptoms of decreased energy and sleep disturbance. Furthermore, DEP-RX patients report poorer overall health relative to the general population.
Conclusion: Despite adequate duration of AD treatment, among depressed patients, the residual symptoms of sleep disturbance and decreased energy may not be effectively addressed by current available AD therapy. The need exists to develop novel treatments that may address these unmet medical needs.

**NO. 95**

**THE RELATIONASHIP BETWEEN PLASMA LEVEL OF INDOLEAMINE 2,3-DIOXYGENASE AND NEOPTERIN IN PATIENTS WITH DEPRESSION**

*Lead Author: Murat Erdem*
*Co-Author(s): Adem Balikci, M.D., Abdullah Bolu, M.D., Tuncer Çaycı, M.D., Emre Aydemir, M.D., Gazi Ünlü, M.D., E. Özgür Akgül, M.D.*

**SUMMARY:**
Objective: Preliminary results of the study that intended to compare serum indolamine 2.3 dioxygenase (IDO) and neopterin levels in patients with major depression and the healthy control group is presented.
Method: 46 depressive disorder (DSM-IV) patients who admitted to Gülhane Military Medical Faculty psychiatric outpatient clinic and a healthy control group of 41 individuals who have similar sociodemographic characteristics were included in the study. Serum levels of IDO and neopterin were measured in blood samples taken from the patients and these data were compared with data of healthy controls.
Results: Groups were similar in terms of socio-demographic characteristics such as age and gender. When IDO and neopterin levels was compared with the control group, IDO and neopterin levels of patients were higher ($p <0.05$). IDO and neopterin levels were higher in patients with multiple episodes than for people with a single episode ($p <0.05$).
Conclusion: Consistent with the literature, serum levels of IDO and neopterin levels were found to be higher in patients than control group. In the literature, it was found that neopterin levels was higher in patients with multiple episodes of depression when compared with patient with a single episode. Our study also suggests a similar relationship for IDO.

**NO. 96**

**LISDEXAMFETAMINE DIMESYLATE EFFECTS ON CYTOCHROME P450 SUBSTRATE PHARMACOKINETICS IN HEALTHY ADULTS IN AN OPEN-LABEL, RANDOMIZED, CROSSOVER STUDY**

*Lead Author: James Ermer, M.S.*
*Co-Author(s): Mary Corcoran, MS, Patrick Martin, MD*

**SUMMARY:**
Introduction: This phase 1, open-label, randomized, 2-period drug interaction study assessed lisdexamfetamine dimesylate (LDX) effects on the activity of 4 cytochrome (CYP) P450 enzymes (CYP1A2, CYP2D6, CYP2C19, and CYP3A).
Hypothesis: LDX does not have a clinically relevant impact on CYP P450 activity.
Methods: Healthy volunteers (18–45 y) participated in a study with a 28-day screening phase and 2 single-dose treatment periods separated by a 7-day washout between doses. Before period 1, participants were randomized to the Cooperstown cocktail, which included CYP1A2 (oral caffeine 200 mg), CYP2D6 (oral dextromethorphan 30 mg), CYP2C19 (oral omeprazole 40 mg), and CYP3A (intravenous midazolam 0.025 mg/kg) substrates, or cocktail + oral LDX 70 mg. The alternate treatment was administered during period 2. Blood samples for pharmacokinetic (PK) analysis were collected predose and serially for 72 hours postdose. Primary endpoints were maximum plasma concentration (Cmax) and area under the plasma concentration vs time curve from 0 to infinity (AUC0-∞) for the parent substrate and its primary metabolite. Treatment differences in Cmax and AUC0-∞ were assessed using geometric mean ratios with 90% CIs; equivalence was concluded if the 90% CIs were within the interval of 0.80–1.25. Safety and tolerability were also assessed.
Results: Thirty participants were randomized and assessed. Geometric least square (LS) means (without vs with LDX) for Cmax (ng/mL) were 5370 vs 5246 for caffeine, 2.43 vs 2.87 for dextromethorphan, 35.23 vs 35.11 for midazolam, and 677.9 vs 466.9 for omeprazole and for AUC0-∞ (ng·h/mL) were 56,207 vs 56,688 for caffeine, 34.85 vs 37.27 for dextromethorphan, 92.07 vs 93.04 for midazolam, and 1428 vs 1499 for omeprazole. Geometric LS mean ratios (90% CI) for Cmax were 0.977 (0.945, 1.01) for caffeine, 1.181 (1.007, 1.384) for dextromethorphan, 0.996 (0.952, 1.043) for midazolam, and 0.689 (0.527, 0.9) for omeprazole and for AUC0-∞ were 1.009 (0.959, 1.06) for caffeine, 1.069 (0.965, 1.185) for dextromethorphan, 1.011 (0.978, 1.044) for midazolam, and 1.049 (0.99, 1.112) for omeprazole; all ratios fell within the accepted equivalence range, except for omeprazole and dextromethorphan Cmax. Parent:metabolite Cmax and AUC0-∞ ratios were similar when LDX was administered with the cocktail, except for the dextromethorphan:dextrorphan AUC0-∞ ratio, which was lower with LDX. No serious or severe treatment-emergent adverse events (TEAEs) or study discontinuations due to TEAEs were reported.
Conclusions: LDX did not alter CYP1A2, CYP2D6, or CYP3A enzyme activity, as evidenced by a lack of LDX effect on AUC0-∞ for substrates of these enzymes. A small reduction in Cmax for omeprazole and its metabolite was observed. However, the conversion rate from parent to metabolite for omeprazole was unaffected and total exposure based on AUC0-∞ was not altered, suggesting LDX only slowed the absorption of omeprazole. (Support: Shire Development LLC)

**NO. 97**

**THE EFFICACY OF LEVOMILNACIPRAN ER IN THE TREATMENT OF PATIENTS WITH DEPRESSION-ASSOCIATED FATIGUE SYMPTOMS**

*Lead Author: Marlene Freeman, M.D.*
*Co-Author(s): Changzheng Chen, Ph.D.; Carl Gommoll, M.S.; Maurizio Fava, M.D.; William M. Greenberg, M.D.; Adam Ruth, Ph.D.*

**SUMMARY:**
Introduction: Fatigue is a frequent symptom in patients with major depressive disorder (MDD) and may have a detrimental impact on functioning and course of illness. Depression-related fatigue is a common residual symptom following antidepressant treatment, and is associated with increased disability and risk of relapse. Antidepressants that are also effective in treating fatigue may play an important role in the management of MDD.
Levomilnacipran extended-release (ER) is a potent and selective serotonin and norepinephrine reuptake inhibitor recently approved by the US FDA for the treatment of MDD in adults. We evaluated the efficacy of levomilnacipran on fatigue symptoms associated with MDD.
Methods: Data for this post hoc analysis were pooled from 2 fixed- and 3 flexible-dose randomized, double-blind, placebo-controlled trials of 8 or 10 weeks' duration evaluating levomilnacipran ER 40-120 mg/day. The efficacy of levomilnacipran ER on individual fatigue symptoms was evaluated using MADRS and HAMD17 items that specifically assess fatigue-related impairment: MADRS item 7 (lassitude); HAMD17 items 7 (work and activities), 8 (retardation) and 13 (somatic symptoms general). Evaluation on each fatigue-related MADRS or HAMD17 item included: change from baseline to end of treatment (least squares mean difference [LSMD] vs placebo) and percent of patients without a residual fatigue symptoms at the end of treatment defined as: MADRS item 7<2; HAMD17 item 7<2; HAMD17 item 8<1; HAMD17 item 13<1. Effects of gender, age, and body mass index on MDD-associated fatigue symptoms was also evaluated.
Additional analyses stratified patients into 2 groups by baseline MADRS Item 7 score: patients with high fatigue (score ≥4) and without high fatigue levels (score <4). Efficacy assessments in these groups included MADRS score improvement and response rates (≥50% MADRS improvement).
Results: Levomilnacipran ER (n=1566) showed significantly greater improvement vs placebo (n=1032) on all fatigue-related MADRS and HAMD17 items (LSMD: MADRS item 7, -0.3 [P<.001]; HAMD17 item 7, -0.3 [P<.001]; HAMD17 item 8, -0.1 [P<.001]; HAMD17 item 13, -0.1 [P<.001]). At end of treatment, a significantly higher proportion of levomilnacipran ER vs placebo patients had MADRS item 7 score<2 (35% vs 28%; P<.001), HAMD17 item 7 score<2 (43% vs 35%; P<.001), HAMD17 item 8 score<1 (46% vs 39%; P=.002); HAMD17 item 13 score<1 (26% vs 18%; P<.001).
The LSMD for levomilnacipran ER vs placebo in MADRS total score was significant both in patients with high (n=1916; LSMD=-3.1, P<.001) and without high (n=681; LSMD=-2.8, P=.002) baseline fatigue. Response rates were significantly greater for levomilnacipran ER vs placebo in patients with high fatigue (43% vs 33%; OR=1.6; P<.001) and without high fatigue (50% vs 39%; OR=1.6; P=.002).
Conclusions: These results suggest that levomilnacipran ER is effective on fatigue symptoms associated with MDD.
Funded by Forest Laboratories, Inc.

**NO. 98**

**A RANDOMIZED STUDY TO EXAMINE THE EFFICACY OF THE CLINICAL OUTCOMES OF PSYCHO-EDUCATIONAL INTERVENTION WITH PATIENTS SUFFERING FROM DEPRESSSION**

*Lead Author: Adel Gabriel, M.D.*
*Co-Author(s): M.Basta, M.D., A. Andrawes, M.D.*

**SUMMARY:**
BACKGROUND: Psycho-education may play a significant role in improving depression treatment outcomes, and may lead to improved adherence to antidepressants.
OBJECTIVES: The primary objective of the study is to assess the efficacy of a systematic patient-centered psych-education program on the clinical outcome in patients with major depressive disorder, being treated with antidepressants.
METHOD: 50 consenting patients with confirmed diagnosis of depression were randomly assignment to a group who received an intervention of systematized education for depression, and to a waiting group who will receive standard care. The experimental group will receive systematic education consisting of (1) Reading material, "depression manual", (2) Individual interview sessions, emphasizing reflection and feedback through discussions facilitated by the research psychiatrist (in total, 5 visits, 30 minutes each), and (3) Group education: 5-8 patients each, facilitated by a psycho-educator (8 sessions). Patients in both groups were treated by antidepressants. The primary clinical efficacy measures include the Quick Inventory of Depressive Symptomatology, Clinician Rated, and Self Rated versions (QIDS-C, and IDS-SR), measured at baseline, 4, 8 and at 12 weeks. The educational outcome measures included the use of reliable and instruments with evidence of validity to measure knowledge of, and attitudes to depression, and the knowledge seeking by patients, and adherence to antidepressants. All patients received SSRI or SNRI antidepressants. The secondary clinical efficacy measures include 1) changes in functioning; using the Work and Social Adjustment Scale (WSAS), and 3) Adherence to antidepressants will be measured utilizing the adherence to antidepressants scale.
RESULTS: At this point, (n= 26) patients randomized to the education intervention group, and (n=15) to the waiting group. The repeated measures, multivariate analysis of variance (rep-MANOVA) was utilized to assess changes over time in depressive symptoms as measured by QIDS-C and QIDS-SR. There was significant improvement in depressive symptomatology over time in both the intervention, and the waiting groups. However, at 12 weeks there were significant differences between groups in both the ratings of QIDS-SR (p< .001) and the QIDS-C (p< .01), with the superiority for the intervention group in reduction of depressive symptoms. The relationship between the clinical outcomes and educational outcomes (Knowledge, and attitudes to depression, and knowledge seeking behavior) and adherence, will be presented.

**NO. 99**

**COMORBIDITY OF SERIOUS HYPERGLYCEMIC STATES IN DIABETES TYPE 1 AND ANXIETY AND DEPRESSIVE DISORDERS: A 20 YEAR RETROSPECTIVE DATA ANALYSIS**

*Lead Author: Leigh C. Gayle, B.S.*
*Co-Author(s): Vishal Madaan, MD, Nivedita Nadkarni, MD*

**SUMMARY:**
Objectives:1) To evaluate if there is an increased prevalence of depressive and anxiety disorders in patients with acute and serious hyperglycemic states in diabetes mellitus type 1. 2) To understand the impact of comorbid depressive and anxiety disorders in managing the serious hyperglycemic complications of type-1 diabetes.
Introduction:Type1 Diabetes Mellitus (DM) is a chronic endocrine disorder caused by impaired insulin secretion due to the destruction of β-cells in the pancreas. The incidence of depressive and anxiety disorders is higher in patients with serious hyperglycemic complications associated with type-1DM. The presence of these disorders can result in poor treatment compliance, decreased self-care and increased negative health outcomes if they are not identified in a timely manner.
Methods:A literature review of the current research on prevalence of comorbid anxiety and depressive disorders in patients with hyperglycemic complications of DMtype 1, such as diabetic ketoacidosis and hyperosmolar hyperglycemic state, was conducted. Then, de-identified patient data was reviewed using the UVa's Clinical Data Repository (CDR). For the purpose of this research study, patient data was filtered using the following factors: patients who received care from 1992-2012, aged 0-110 years, diagnosis of diabetic ketoacidosis and hyperosmolar hyperglycemic states associated with diabetes mellitus type 1 along with a diagnosis of depressive and anxiety disorders. Demographic data was collected from 2020 patients with DM type 1 and comorbid diagnosis of depressive and anxiety disorders.
Results:A quantitative analysis of data obtained from the CDR and using the aforementioned filters was conducted. Our sample showed a 78% increase in incidence of depressive disorders and a 29 % increase in incidence of anxiety disorders in patients with hyperglycemic complications associated with type-1 DM compared to the non-diabetic population. In our overall database (N=1,202,760), 7.5% of patients had a depressive disorder (N=90,445). In the patients with serious hyperglycemic states with type-1 DM (N=2020), 13.4% were diagnosed with a depressive disorder (N=270). Similarly, in our overall sample (N=1,202,760), 5.6% of patients had an anxiety disorder (N=67,883). In the patients with complicated type-1diabetes (N=2020) however, 7.2% were diagnosed with an anxiety disorder (N=146).
Conclusion:Patients with type-1DM, especially those with complications such as ketoacidosis or hyperosmolarity, have a higher risk of developing depressive and anxiety disorders. These comorbid disorders can lead to an impaired quality of life, poor treatment compliance, less glycemic control, higher treatment costs and increased negative health outcomes. Data obtained from the UVA-CDR are consistent with the presence of increased risk for these disorders in serious hyperglycemic states. Early identification and management of comorbid psychiatric disorders will improve prognosis.

**NO. 100**
**EFFICACY AND SAFETY OF VILAZODONE 20 MG AND 40 MG IN MAJOR DEPRESSIVE DISORDER: A RANDOMIZED, DOUBLE-BLIND, PLACEBO- AND ACTIVE-CONTROLLED TRIAL**

*Lead Author: Carl Gommoll*
*Co-Author(s): Dalei Chen, Ph.D., Arif Khan, M.D., Maju Mathews, M.D., Rene Nunez, M.D.*

**SUMMARY:**
Introduction: Vilazodone (VLZ) is a potent serotonin reuptake inhibitor and 5-HT1A receptor partial agonist approved for the treatment of major depressive disorder (MDD) in adults. The efficacy and safety of 40-mg VLZ was established in 2 randomized, placebo-controlled trials. The objective of this study was to assess the efficacy and safety of once-daily VLZ 20mg and 40mg in adults with MDD.
Methods: This study (NCT01473381) was a multicenter, randomized, double-blind, placebo- and active-controlled, fixed-dose study in MDD patients comparing VLZ 20mg/d and VLZ 40mg/d with placebo (PBO); citalopram 40mg/d (CIT) was included for assay sensitivity. Primary efficacy outcome was change from baseline to Week 10 in Montgomery-Åsberg Depression Rating Scale (MADRS) score; secondary outcomes were change in Clinical Global Impressions-Severity (CGI-S) and MADRS sustained response rate (total score ≤12 for at least the last 2 consecutive visits). For the VLZ groups, P values were adjusted to control for multiple comparisons. Safety assessments included adverse events (AEs), laboratory and vital sign measures, ECG, Columbia-Suicide Severity Rating Scale (C-SSRS), and Changes in Sexual Functioning Questionnaire (CSFQ).
Results: The safety population comprised 281 placebo, 288 VLZ 20mg, 287 VLZ 40mg, and 282 citalopram patients; discontinuation rates were 25%, 31%, 34%, and 29%, respectively. MADRS score improvement was significantly greater for VLZ 20mg (LSMD, -2.57; adjusted P=.0073), VLZ 40mg (LSMD, -2.82; adjusted P=.0034), and CIT (LSMD, -2.74; P=.0020) compared with placebo. Reduction in CGI S scores were significantly greater than PBO for VLZ 20mg (LSMD, -0.35; adjusted P=.0073), VLZ 40mg (LSMD,-0.33; adjusted P=.0097), and CIT (LSMD, -0.35; P=.0025). More patients met criteria for MADRS sustained response in the VLZ 20mg (29.9%), VLZ 40mg (33.5%), and CIT (31.1%) groups versus placebo (26.3%); differences were not statistically significant.
Rates of treatment-emergent AEs (TEAEs) were similar for VLZ 20mg (72.2%), VLZ 40mg (77.4%), and CIT (77.0%) and placebo (63.3%). TEAEs occurring in ≥5% of vilazodone patients and twice placebo were diarrhea, nausea, vomiting, and insomnia. Majority of TEAEs were mild or moderate in severity. Serious AEs (SAEs) were reported in 2 placebo, and 4 VLZ 20mg, 4 VLZ 40mg, and 6 CIT patients. Both VLZ groups had greater improvement on the CSFQ relative to citalopram; differences were not statistically significant.
Conclusion: Significantly greater improvement was observed in MADRS and CGI-S scores for VLZ 20mg and 40mg and citalopram 40 mg versus placebo. Rates of MADRS sustained response were higher for both VLZ groups and citalopram compared with placebo, but the differences were not statistically significant. VLZ was generally well tolerated. These results support the efficacy, safety, and tolerability of VLZ 20mg and 40mg for the treatment of MDD in adults. This study was supported by Forest Laboratories, Inc.

**NO. 101**
**THE EFFICACY OF LEVOMILNACIPRAN ER ACROSS SYMPTOMS OF MAJOR DEPRESSIVE DISORDER: POOLED ANALYSES OF**

**MADRS ITEMS AND RESIDUAL SYMPTOMS**

*Lead Author: William Greenberg, M.D.*
*Co-Author(s): Changzheng Chen, PH.D.; Carl Gommoll, MsC; Roger S. McIntyre, M.D., FRCPC; Adam Ruth, Ph.D.*

**SUMMARY:**
Introduction: The symptomatology of patients with major depressive disorder (MDD) is highly variable. The clinician-rated Montgomery-Åsberg Depression Rating Scale (MADRS) is a validated instrument that evaluates 10 different symptom domains, with each item score ranging from 0 (no symptoms) to 6 (extremely severe or unrelenting symptoms).
Levomilnacipran is approved for the treatment of MDD in adults. The efficacy of levomilnacipran extended-release (ER) was evaluated in 5 Phase II/III trials. In 4 of these trials, levomilnacipran ER demonstrated superiority over placebo on the primary efficacy measure, MADRS total score change from baseline to end of study; 1 trial showed numerical improvement for levomilnacipran ER vs placebo but the difference did not reach statistical significance. Focusing on individual MADRS items rather than total score, post hoc analyses of pooled data from these trials were conducted to further investigate the effects of levomilnacipran ER treatment on a broad range of depressive symptoms in adults with MDD.
Methods: Data were pooled from 2 fixed- and 3 flexible-dose randomized, double-blind, placebo-controlled trials of 8 or 10 weeks' duration evaluating levomilnacipran ER 40-120 mg/day in adult patients with MDD. For each MADRS item, least square mean (LSM) change from baseline to end of treatment was analyzed by ANCOVA based on the pooled intent-to-treat population (ITT; n=2598). The percentage of patients with no or minimal residual symptoms on individual MADRS items at the end of treatment (defined as MADRS item score <2) was also analyzed for each MADRS item using a logistic regression model based on the population of study completers (n=2015).
Results: In the pooled ITT population, significantly greater improvements were found with levomilnacipran ER versus placebo on all MADRS items except for Reduced Appetite. LSM differences from placebo on the remaining 9 items were: Apparent Sadness, -0.4; Reported Sadness, -0.4; Inner Tension, -0.3; Reduced Sleep, -0.1; Concentration Difficulties, -0.3; Lassitude, -0.3; Inability to Feel, -0.3; Pessimistic Thoughts, -0.3; Suicidal Thoughts, -0.1; all P<.05.). In the completer population, significantly more levomilnacipran ER patients relative to placebo patients had no or minimal residual symptoms on all MADRS items at the end of treatment. The odds ratios for levomilnacipran ER versus placebo ranged from 1.26 (Reduced Sleep, Reduced Appetite) to 1.75 (Apparent Sadness), with P<.05 for all 10 MADRS items.
Conclusions: Post hoc analyses of pooled data from 5 double-blind placebo-controlled studies indicate that in adult patients with MDD, treatment with levomilnacipran ER may improve a range of depressive symptoms. Patients who received levomilnacipran ER in these studies had significantly greater odds of achieving no or minimal residual symptoms after 8-10 weeks of treatment than those who received placebo. This study was funded by Forest Laboratories, Inc.

**NO. 102**

**WHICH COGNITIVE DOMAINS ARE IMPACTED BY TREATMENT WITH VORTIOXETINE?**

*Lead Author: John E. Harrison, Ph.D.*
*Co-Author(s): Søren Lophaven, Ph.D., Christina Kurre Olsen, Ph.D.*

**SUMMARY:**
Objective: Vortioxetine treatment improved the performance of elderly patients with MDD (NCT00811252) on the Digit Symbol Substitution Test (DSST), which requires the integrity of several cognitive domains. In order to determine which domain, or domains, of cognition were affected, we used additional measures of specific cognitive skills in a second study1 (NCT01422213). The goal of these post-hoc analyses is to evaluate the efficacy after 1 and 8 weeks of treatment with vortioxetine 10 or 20mg/day on the cognitive domains "executive function," "attention/speed of processing" and "memory."
Methods: Data from a double-blind, randomized, fixed-dose, placebo-controlled, depression study were used. 602 eligible patients aged 18-65 years were randomized (1:1:1) to vortioxetine 10mg/day, vortioxetine 20mg/day, or placebo for 8 weeks of double-blind treatment. The following cognition variables were used to assess cognitive function at baseline, week 1 and week 8: DSST number of correct symbols, Rey Auditory Verbal Learning Test (RAVLT) acquisition and delayed recall, Trail Making Test (TMT) parts A and B, Stroop test congruent and incongruent, Simple Reaction Time (SRT) and Choice Reaction Time (CRT) tests. The cognition variables were standardized and used for constructing composite Z-scores for cognitive domains: the Stroop incongruent test and TMT B for executive function; the Stroop congruent test, TMT A, SRT and CRT for attention/speed of processing, and the RAVLT acquisition and delayed recall for memory. The composite Z-scores and DSST number of correct symbols were analyzed using a Mixed Model including terms for grouped site, baseline value, baseline value-by-visit interaction, and treatment-by-visit interaction. Estimated treatment differences were based on the Least Squares means for the treatment-by-visit interaction. Least Squares means were rescaled to ensure SD=1.
Results: At week 1, separation of vortioxetine 20mg/day versus placebo was found for attention/speed of processing (composite Z-score=0.28; p=0.007) and DSST number of correct symbols (Z-score=0.22; p=0.033), and of vortioxetine 10mg/day for executive function (composite Z-score=0.21; p=0.0425). At week 8, vortioxetine 10mg/day and 20 mg/day separated from placebo for executive function and attention/speed of processing, with composite Z-scores ranging from 0.35 to 0.49 (all p<0.01). Composite Z-scores for memory were 0.31 (p=0.0036, 10mg/day) and 0.22 (p=0.0349, 20mg/day). Standardized effect sizes for DSST number of correct symbols were 0.51 (p<0.0001, 10mg/day) and 0.52 (p<0.0001, 20mg/day).
Conclusions: Vortioxetine (10 and 20mg/day) improves cognitive performance across several domains, including executive function, attention/speed of processing and memory. The positive effect on the DSST appears to be due to improvements on a number of cognitive skills.

**NO. 103**

**A PHASE 3, LONG-TERM, OPEN-LABEL, EXTENSION STUDY EVALUATING THE SAFETY AND TOLERABILITY OF VORTIOXETINE IN SUBJECTS WITH MAJOR DEPRESSIVE DISORDER**

*Lead Author: Paula L. Jacobsen, M.S.*
*Co-Author(s): Serena Chan, Ph.D., Linda Harper, M.D., Atul R.*

*Mahableshwarkar, M.D. Michael Serenko, M.D.*

**SUMMARY:**
Introduction: Vortioxetine was FDA approved September 30, 2013 for the treatment of adults with major depressive disorder (MDD). Its mechanism of action is thought to be related to its multimodal activity, combining direct modulation of serotonin receptor activity and inhibition of the serotonin transporter.
Objective: The primary goal of this open-label extension study (OLE) was to evaluate the long-term safety and tolerability of flexible doses of vortioxetine in subjects with MDD. The secondary goal was to evaluate its effectiveness using measures of depression, anxiety, and disability.
Methods: This was a 52-week flexible-dose OLE (NCT01152996) of subjects who completed 1 of 3 previous short-term MDD studies of vortioxetine (NCT01153009, NCT01163266, NCT01179516). All subjects were switched to vortioxetine 10 mg/day for the first week of open-label treatment, with dose subsequently increased to 15 or 20 mg/day based on investigator judgment. Safety and tolerability were assessed by treatment-emergent adverse events (TEAEs), vital signs, electrocardiograms, laboratory values, and physical examination. Efficacy measures included the Montgomery-Åsberg Depression Rating Scale (MADRS), Hamilton Anxiety Scale (HAM-A), Clinical Global Impression Scale-Severity of Illness (CGI-S) and Sheehan Disability Scale (SDS).
Results: A total of 1075 subjects enrolled, 1073 received one or more doses of vortioxetine, and 538 (50.0%) completed the study. Of the 537 subjects who withdrew early, 115 (10.7% of original study population) withdrew due to TEAEs. TEAEs were reported by 854 subjects (79.6%), with 34 serious AEs (SAEs) reported by 29 subjects (2.7%), 11 of whom (1.0%) withdrew. The following SAEs were reported by more than 1 subject: acute cholecystitis (n=2, unrelated); breast cancer (n=3, unrelated); and suicide attempt (n=2, possibly related, 1 unrelated). No deaths occurred during the study. Long-term treatment with vortioxetine was well tolerated; TEAEs reported by ≥5% of subjects were nausea (24.0%), headache (12.7%), diarrhea (7.5%), nasopharyngitis (6.3%), vomiting (6.3%), viral upper respiratory tract infection (6.2%), constipation (6.1%), weight increase (6.1%), upper respiratory tract infection (5.6%) and insomnia (5.2%). Laboratory values, vital signs, and physical examinations revealed no trends of clinical concern. Mean MADRS total score was 32.8 before the start of the initial double−blind studies, 19.9 at the start of the OLE and 11.9 after 52 weeks of treatment (observed cases, OC). Mean HAM-A score was 18.8 before the start of the initial double−blind studies, 11.5 at the start of the OLE and 7.8 after 52 weeks (OC). Maintenance of improvement was also seen in mean CGI−S and SDS scores.
Conclusions: In this 52-week, flexible-dose OLE study, vortioxetine 15 mg and 20 mg was safe and well tolerated. After entry into this study, subjects continued to improve in depression, anxiety, and disability throughout the treatment period.

**NO. 104**

**THE IMPACT OF AGE AND MAJOR DEPRESSION ON HEMOGLOBIN A1C LEVELS IN TYPE 2 DIABETES**

*Lead Author: Moise-Denis K. Jean, M.P.H.*
*Co-Author(s): Dan V. Mihailescu, M.D., Anand Kumar, M.D., & Olusola A. Ajilore, M.D., Ph. D*

**SUMMARY:**
Objective: To examine differences in diabetes severity using hemoglobin A1C (HbA1C) levels in adults who have type 2 diabetes with and without major depression and to determine what clinical factors may contribute to any differences
Research Design & Methods: Clinical and demographic data were collected from a larger neuroimaging study of type 2 diabetes and major depression. Of 112 participants with type 2 diabetes (age 56.37 ± 11.29 years, 58.0% male), 40.2% had co-morbid major depression. Differences in demographic and clinical variables between the two groups were analyzed using t-tests, multivariate ANOVA, and chi-square analysis. The relationship between HbA1C levels and age were further examined using a two-tailed Pearson's correlation.
Results: There was a significant difference in HbA1C levels (p=0.005) with higher levels in depressed compared to non-depressed participants with diabetes. After controlling for age, the difference in HbA1C levels was no longer significant (p=0.114). There was a significant negative correlation between age and HbA1C levels across all participants with diabetes (r= -.402, p<0.01) and within the depressed (r= -.479, p<0.01) and non-depressed participants (r= -.279, p=0.022) individually. Smokers were found to be significantly younger (51.92 ± 9.45) than nonsmoking participants (57.61 ± 11.56, p=0.029). Diastolic blood pressure, total cholesterol, LDL cholesterol, and BMI were also negatively correlated with age among all participants with diabetes, but did not account for the difference between subject groups.
Conclusion: Results suggest younger adults with diabetes require more attention regarding diabetes management, particularly in the context of major depression. Further, depression needs to be screened and treated among all individuals with diabetes since this comorbidity exacerbates diabetes severity.

**NO. 105**

**FACING DEPRESSION WITH BOTULINUM TOXIN : A RANDOMIZED PLACEBO-CONTROLLED TRIAL**

*Lead Author: Tillmann Kruger, M.D.*
*Co-Author(s): M. Axel Wollmer, M.D.*

**SUMMARY:**
Introduction: Positive effects on mood have been observed in subjects who underwent treatment of glabellar frown lines with botulinum toxin. In an open case series depression remitted or improved after such treatment. We initiated a randomized double-blind placebo-controlled study (RCT) in which botulinum toxin injection to the glabellar region as an adjunctive treatment of major depression were assessed (ClinicalTrials.gov, number, NCT00934687)
Methods: Thirty patients were randomly assigned to a verum (onabotulinumtoxinA, n=15) or placebo (saline, n=15) group. The primary end point was change in the 17-item version of the Hamilton Depression Rating Scale (HAMD17) six weeks after treatment compared to baseline.
Results: Regarding baseline characteristics there were no significant differences between the verum and the placebo group. Throughout the sixteen-week follow-up period there was a significant improvement in depressive symptoms in the verum group compared to the placebo group as measured by the

Hamilton Depression Rating Scale (F=5.76, p<0.001, η2=0.17). Six weeks after a single treatment scores of onabotulinumtoxinA recipients were reduced on average by 47.1% and by 9.2% in placebo-treated participants (F=12.30, p=0.002, η2=0.31, d=1.28). The effect size was even larger at the end of the study (d=1.80) and in females (d=2.41). Treatment-dependent clinical improvement was also reflected in the Beck Depression Inventory, and in the Clinical Global Impressions Scale. Additional analysis revealed that the level of agitation (as assessed by the agitation item of the HAMD17) had an overall precision of 78% in predicting response (area under the receiver operating characteristic curve, AUC=0.87).
Conclusions: This study shows that a single treatment of the glabellar region with botulinum toxin can shortly accomplish a strong and sustained alleviation of depression in patients, who did not improve sufficiently on previous medication. It supports the concept, that the facial musculature not only expresses, but also regulates mood states, as explained by the facial feedback hypotheses. These novel findings are about to be replicated by two subsequent RCTs (NCT01556971, NCT01392963).

**NO. 106**

**TOTAL ANTIOXIDANT ACTIVITY IN MAJOR DEPRESSIVE DISORDER**

*Lead Author: Sang-Kyu Lee, M.D., Ph.D.*
*Co-Author(s): Gyoung-Ja Lee, ph.D.*

**SUMMARY:**

Antioxidant activity refers to any compound's ability to neutralize harmful free radical or block the reaction of a substrate with reactive oxygen or nitrogen species. Increased reactive oxygen radicals and impaired antioxidant systems are considered to play a role in both depression and other psychiatric disorders. The depressive disorder is a multifactorial disease and it has recently been suggested that it could be a result of the imbalance between oxidative and antioxidative systems. Therefore, there has been a growing recognition of the importance of oxidative stress in the pathophysiology of depressive disorder.
Potentiometry utilizing redox reactions in a [Fe(CN)6]3-/[Fe(CN)6]4- redox-reagent solution has been considered as simple, highly sensitive, fast, and inexpensive method for evaluating total antioxidant activity (TAA) in various samples such as drinks, food, blood, etc. In this study, for the first time, the determination of TAA using potentiometric method has been applied to depression rating. For a depressed group of 59 persons and a normal group of 46 persons, beck depression inventory (BDI) score and TAA value were evaluated. From a comparison of BDI and TAA results, it is found that the TAA value is closely related to the BDI score and the value of TAA increases with decreasing BDI score. The plot of TAA vs. BDI exhibited a linear relationship with a negative slope (-0.017+0.001) and a correlation coefficient of 0.94 was obtained. This strongly suggests that the potentiometric method for TAA determination has a potential to be used as a clinical tool in depression.

**NO. 107**

**DISENTANGLING SENSE OF COHERENCE AND RESILIENCE IN CASE OF MULTIPLE TRAUMAS**

*Lead Author: Christophe J. T. Leys*
*Co-Author(s): Pierre Fossion, M.D., Chantal Kempenaers, PhD, Stéphanie Braun, PhD, Paul Verbanck, M.D., PhD, Paul Linkowski, M.D., PhD*

**SUMMARY:**

Depressive and anxiety disorders (DAD) are a major public health problem.We investigate the hypothesis that Sense of Coherence (SOC) is a mediator between childhood trauma, moderated by later trauma, and depressive and anxious symptoms (DAD) in adulthood. Moreover, we disentangle the concepts of resilience and SOC. Former Hidden Children (FHC), the Jewish youths who spent World War II in various hideaway shelters across Nazi-occupied Europe, were compared with a control group. In each group we measured the presence of multiple traumas, Resilience, DAD and SOC. We tested a mediated moderation model with Childhood Trauma as the predictor; later trauma as the moderator; SOC as the mediator; and DAD as the outcome variable. Results were consistent with a sensitization model of DAD partially mediated by SOC. A first component of SOC was similar to an aptitude and another component was assimilated with a personality trait.

**NO. 108**

**VORTIOXETINE-INDUCED RECOVERY OF MEMORY IMPAIRMENT IN OLD MICE IS ASSOCIATED WITH ACTIVATION OF SYNAPTIC PLASTICITY GENES BUT NOT NEUROGENESIS**

*Lead Author: Yan Li, M.D., Ph.D.*
*Co-Author(s): Aicha Abdourahman, M.S., Joseph A Tamm, Ph.D., Connie Sanchez, Ph.D., D. Sc., Maria Gulinello, Ph.D.*

**SUMMARY:**

Introduction
Decreases in neurogenesis and synaptic plasticity have been proposed as underlying mechanisms for memory decline in aging. Antidepressants increase neurogenesis and neuroplasticity in young adult mice, but it is not clear if this also occurs in old mice, or if there is a concomitant improvement in memory performance. In addition, antidepressants with different mechanisms have not been systematically examined in old mice with respect to cognitive function, neurogenesis and neuroplasticity. In this study using 12-month-old female mice, we compared the effects of two different antidepressants (the selective serotonin reuptake inhibitor [SSRI] fluoxetine, and the new multimodal acting antidepressant vortioxetine) in spatial memory, hippocampal neurogenesis and expression of genes related to neuroplasticity. Vortioxetine is a 5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist, and inhibitor of the serotonin transporter.
Hypothesis
Antidepressants with different mechanisms may affect memory performance in old mice differently, via modulating neurogenesis and/or neuroplasticity.
Methods
Female C57BL/6 mice at 11 months of age were divided into three groups and received the following chronic (1 month) treatments: vortioxetine (10 mg/kg/day in food), fluoxetine (16 mg/kg/day in drinking water) or vehicle (drinking plain tap water and eating normal rodent chow). Spatial memory was evaluated by the object placement test. Hippocampal neurogenesis was measured by quantifying dentate gyrus sub-granular cells that incorporated bromodeoxyuridine (BrdU). Expression levels of genes related to neuroplasticity were measured in hippocampus using quantitative PCR.

Results
Vortioxetine significantly improved visuospatial memory in old mice; whereas fluoxetine was ineffective. Neither vortioxetine nor fluoxetine significantly increased neurogenesis in old mice. Vortioxetine, but not fluoxetine, significantly increased the expressions of several neuroplasticity-related genes in the hippocampus of old mice, including SHANK1, neuroligin-2 and spinophilin.
Conclusions and discussion
In healthy old female mice, deficits in visuospatial memory were improved by chronic treatment with the multimodal acting antidepressant vortioxetine, but not with the SSRI fluoxetine. Vortioxetine increased expression levels of several genes related to synaptic plasticity. These results indicate that vortioxetine-induced recovery of memory impairment in old mice is associated with activation of synaptic plasticity genes, but is independent of neurogenesis.

**NO. 109**

**A META-ANALYSIS OF THE EFFICACY OF VORTIOXETINE IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER AND HIGH LEVELS OF ANXIETY SYMPTOMS**

*Lead Author: Atul Mahableshwarkar, M.D.*
*Co-Author(s): David S. Baldwin, D.M., Yinzhong Chen, Ph.D., Henrik Loft, M.Sc. & Ph.D., Francois Menard, M.D.*

**SUMMARY:**
INTRODUCTION
Vortioxetine was FDA approved on September 30, 2013 for the treatment of major depressive disorder (MDD) within the dose range of 5-20 mg/day. With direct modulation of receptor activity and inhibition of the serotonin transporter, in vitro studies have shown vortioxetine to have a multimodal mechanism of action. This analysis evaluated the effect of vortioxetine compared to placebo (PBO) in MDD patients with high levels of anxiety.
METHODS
Study-level data from 9 randomized placebo-controlled clinical trials of vortioxetine (5-20mg/day) in adult MDD patients were assessed using a mixed model for repeated measures (full analysis set). A random-effects meta-analysis was conducted based on study-level results, with additional tests for heterogeneity. All patients met DSM-IV criteria for a major depressive episode and were >18 years old, with a score of >22 (1 study), >26, or >30 (2 studies) on the Montgomery-Åsberg Depression Rating Scale (MADRS). Results were stratified by baseline Hamilton Anxiety Scale (HAM-A) score, with a baseline score ≥20 chosen as the criterion for high level of anxiety symptoms. The principal outcome was the difference in change from baseline to study endpoint (week 6/8) in MADRS total score for vortioxetine vs PBO-treated patients. Additional outcomes included change from baseline in HAM-A score.
RESULTS
Of 2416 patients treated with vortioxetine (5–20mg), 1210 (50.1%) had a baseline HAM-A score ≥20. Vortioxetine demonstrated a dose-related response on the MADRS total score in the high HAM-A patient subgroup, with a mean difference from PBO in change from baseline to week 6/8 of -3.3 (5 mg, n=361, p<0.001), -3.8 (10 mg, n=315, p<0.001), -1.1 (15 mg, n=171, p=NS) and -5.1 points (20 mg, n=156, p<0.005). These findings are similar to the effect of vortioxetine on the difference from placebo at week 6/8 on MADRS total score in the total MDD population: -2.6 (5mg, n=714, p<0.01), -3.5 (10mg, n=571, p<0.001), -2.6 (15mg, n=344, p=NS) and -4.5 points (20mg, n=359, p<0.001).
Vortioxetine also reduced anxiety symptoms in patients with baseline HAM-A ≥20. For the subgroup of patients with a baseline HAM-A score ≥20, vortioxetine treatment showed a dose-related improvement, with a mean difference from PBO in change from baseline to week 6/8 in HAM-A of -2.0 (5mg, p<0.01), -2.1 (10mg, p<0.01), -0.2 (15mg, p=NS), and -2.4 points (20mg, p<0.1). In the total MDD population, the mean difference from PBO for vortioxetine in HAM-A score was -1.5 (5mg, p<0.05), -1.7 (10mg, p<0.05), -0.9 (15mg, p=NS) and -2.0 points (20mg, p<0.05).
CONCLUSIONS
While depressed patients with high anxiety symptom severity are known to be more resistant to treatment than patients with a low level of anxiety, in this analysis in depressed patients with a high level of anxiety (HAM-A score >20), vortioxetine demonstrated significant improvements in depressive and anxious symptoms at 5, 10, and 20mg doses.

**NO. 110**

**EFFECTS OF VILAZODONE ON SEXUAL DYSFUNCTION IN MAJOR DEPRESSIVE DISORDER: A RANDOMIZED, DOUBLE-BLIND TRIAL WITH PLACEBO AND ACTIVE CONTROLS**

*Lead Author: Maju Mathews, M.D.*
*Co-Author(s): Dalei Chen, Ph.D., Carl Gommoll, M.Sc., Rene Nunez, M.D.*

**SUMMARY:**
Introduction: Vilazodone, a serotonin reuptake inhibitor and 5-HT1A receptor partial agonist, is approved for the treatment of major depressive disorder (MDD) in adults. A recent positive Phase IV study (NCT01473394) supported the efficacy of vilazodone 20 and 40 mg/day (VLZ 20, VLZ 40) in the treatment of MDD; citalopram 40 mg/day (CIT) was used to evaluate assay sensitivity. All active treatment groups showed statistically significant improvement versus placebo (PBO) on the Montgomery-Asberg Depression Rating Scale (MADRS), the primary efficacy measure.
Both MDD and treatment with serotonergic antidepressants can be associated with sexual dysfunction. Post hoc analyses characterized sexual functioning in patients with MDD treated with PBO, VLZ 20, VLZ 40, or CIT.
Methods: A 10-week multicenter, randomized, double-blind, placebo- and active-controlled, parallel-group, fixed-dose study compared VLZ 20, VLZ 40, and CIT with PBO (NCT01473381). The study comprised male and female outpatients aged 18 to 70 years who met Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) criteria for MDD and had a baseline MADRS score ≥26.
Sexual functioning was assessed using the Changes in Sexual Functioning Questionnaire (CSFQ) in 1147 patients (PBO=264, VLZ 20=267, VLZ 40=259, CIT=257) with a baseline and ≥1 post-baseline CSFQ score.
Sexual dysfunction was defined as CSFQ scores ≤47 for men and ≤41 for women. Post hoc analyses evaluated mean change in CSFQ score from baseline to end of treatment (EOT). The percentage of patients with normal sexual function at baseline who met sexual dysfunction criteria at 2 consecutive double-

blind visits and the percentage with sexual dysfunction at baseline who had normal sexual function at EOT were also analyzed.
Results: A high percentage of patients in all treatment groups had baseline sexual dysfunction: men (PBO=50%, VLZ 20=54%, VLZ 40=55%, CIT=52%); women (PBO=62%, VLZ 20=64%, VLZ 40=70%, CIT 67%). Baseline CSFQ scores were approximately 42 for all treatment groups. Least squares mean increase in CSFQ scores at EOT was 2.5 for PBO, 2.6 for VLZ 20, 2.0 for VLZ 40, 1.5 for CIT.
In patients with normal baseline sexual function, 12% of PBO and 16%, 15%, and 17% of VLZ 20, VLZ 40, and CIT patients, respectively, met criteria for sexual dysfunction at 2 consecutive double-blind visits. In patients with baseline sexual dysfunction, 33% of PBO, and 35%, 30%, and 28% of VLZ 20, VLZ 40, and CIT patients improved to normal sexual function at EOT.
Conclusions: In a post hoc analysis of a Phase IV trial, the rates of sexual dysfunction were similar for PBO-, VLZ-, and CIT-treated patients. Mean CFSQ scores increased in all treatment groups, however, CFSQ score increases were numerically greater in both VLZ groups compared with CIT. This study was supported by Forest Laboratories, Inc.

**NO. 111**

**RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF THE EFFICACY OF VORTIOXETINE IN ADULT PATIENTS WITH MAJOR DEPRESSIVE DISORDER (MDD)**

*Lead Author: Roger S. McIntyre, M.D.*
*Co-Author(s): Søren Lophaven, Ph.D., Christina Kurre Olsen, Ph.D.*

**SUMMARY:**

Objective: To present secondary analyses of depressive efficacy endpoints after acute treatment of vortioxetine 10 mg/day and 20 mg/day versus placebo on depression in patients with MDD. Vortioxetine is a novel antidepressant with multimodal activity. It is thought to work through a combination of two modes of action: a direct effect on serotonin receptor activity and serotonin reuptake inhibition.
Methods: Patients aged ≥18 and ≤65 years with recurrent MDD according to DSM-IV-TR, a current major depressive episode ≥3 months, and a Montgomery-Åsberg Depression Rating Scale (MADRS) total score ≥26 at both screening and baseline were eligible for this multi-national, randomized, double-blind, placebo-controlled study (FOCUS: NCT01422213). After screening, subjects were randomized to receive vortioxetine 10 or 20 mg/day or placebo for 8 weeks. The primary efficacy outcome was effect on cognitive assessments. Pre-defined secondary efficacy outcomes assessing depressive symptom severity included change from baseline to Weeks 1, 4, and 8 in the MADRS total score, the Clinical Global Impression – Severity of Illness (CGI-S) and the Clinical Global Impression – Global Improvement (CGI-I) scores using a mixed model for repeated measurements (MMRM).
Results: With a mean baseline MADRS total score of 31.6±3.7 and a CGI-S score of 4.6±0.6, patients were moderately to severely depressed. After 8 weeks, the mean MADRS decreased (improved) by 10.9 (placebo), 15.6 (vortioxetine 10 mg) and 17.6 (vortioxetine 20 mg) points. The difference to placebo (n=194) in mean change from baseline to Week 8 in the MADRS total score (FAS, MMRM) was -4.7 (n=193, p<0.001) for vortioxetine 10 mg and -6.7 (n=204, p<0.001) for vortioxetine 20 mg. Vortioxetine 10 mg separated from placebo on 6 MADRS items (1-3, 5, 9 and 10) at Week 4 and on all 10 items at Week 8. For vortioxetine 20 mg, separation from placebo was seen on MADRS items 1, 5 and 7 at Week 1, on 9 items (1-9) at Week 4, and on all 10 items at Week 8. The clinical relevance of these results was supported by the CGI results, with separation (improvement) from placebo for the CGI-S of -0.08 at Week 1 (p=0.077), -0.27 at Week 4 (p=0.004) and -0.65 at Week 8 (p<0.001) for vortioxetine 10 mg and -0.18 at Week 1, -0.43 at Week 4 and -0.85 at Week 8 (p<0.001 for all) for vortioxetine 20 mg. Separation (improvement) from placebo for the CGI-I for vortioxetine 10 mg was -0.15 at Week 1 (p=0.020), -0.41 at Week 4 (p<0.001) and -0.61 at Week 8 (p<0.001) and for vortioxetine 20 mg was -0.28 at Week 1 (p<0.001), -0.54 at Week 4 (p<0.001) and -0.86 at Week 8 (p<0.001).
Conclusions: In this study, both vortioxetine doses separated from placebo with respect to depressive symptom severity and clinical global assessments. The difference to placebo in the MADRS total score was greater for the 20 mg dose than the 10 mg dose.

**NO. 112**

**APPLICATION OF THE BAND PASS APPROACH TO THE HYPERICUM DEPRESSION TRIAL STUDY GROUP STUDY**

*Lead Author: David Mischoulon, M.D., Ph.D.*
*Co-Author(s): Caroline McGlynn*

**SUMMARY:**

Introduction: Approximately 49% of randomized clinical trials (RCTs) of depression treatment fail to demonstrate significant differences between antidepressants and placebo. Failures of RCTs may be due at least in part to high placebo response rates. Therefore, there is a need to improve the efficiency and accuracy of RCTs in Major Depressive Disorder (MDD) to reduce the frequency of failed trials. We used a novel statistical method, the band pass approach, to analyze data from the Hypericum Depression Trial Study Group's previously failed study on the antidepressant effects of St. John's wort and sertraline, in order to limit placebo response rates.
Hypothesis: Application of the band pass approach will reduce placebo response rates and demonstrate a significant advantage for St John's wort and sertraline compared to placebo with regard to clinical improvement in depression symptoms based on the 17-item Hamilton-D (HAM-D-17) scale, and with regard to response and remission rates.
Methods: Two enrichment windows (filters), each defined by two boundaries placed on high and low ends of the placebo response distribution, were applied to the data. Filter 1 selected sites where mean change in HAM-D-17 from baseline to week 8 of placebo treatment was between 3-11 points. Filter 2 selected sites where overall percent change in HAM-D-17 score from baseline to week 8 of placebo treatment was between 10% and 45%. This approach filtered out data from treatment centers in which the mean values of the placebo response fell outside 'normal' boundaries. The intention was to eliminate sites with unusually high or low placebo response rates, on the assumption of a site-related effect on improvement. Comparisons of changes in HAM-D-17 scores between treatment groups were carried out by the independent samples t-test. Comparisons of response and remission rates were carried out by chi-squared analysis. All analyses were performed for an intent-to-treat

sample and for study completers.
Results: After applying each filter separately, we found no significant differences between treatment groups with regard to improvement in HAM-D-17 scores and overall response and remission rates, for completers and for the intent-to-treat sample (P>0.05 for all comparisons).
Discussion: This is the first study to utilize an enrichment window in a 3-armed depression trial. Application of the band pass did not unmask any significant differences between St John's wort, sertraline, or placebo in this failed RCT. Results suggest that the overall negative results of the parent study were not due to site-related effects. The enrichment window approach may have been less effective in a 3-arm study than a 2-arm study because the remaining sample size per treatment arm is smaller. Nonetheless, the implementation of this viable strategy should be given serious consideration in the evaluation of a multitude of clinical and behavioral trials.

**NO. 113**

**GENDER DIFFERENCES IN SEASONALITY PATTERNS OF MOOD AND BEHAVIOR IN THE OLD ORDER AMISH**

*Lead Author: Hira Mohyuddin*
*Co-Author(s): Mohyuddin H, Raheja UK, Stephens SH, Reeves GM, Pollin TI, Stiller J, Ryan K, Dipika Vasvani, Falguni Patel, , Maclain H, Weitzel N, Snitker S, Mitchell BD, Shuldiner AR, Postolache TT,*

**SUMMARY:**

Background: Seasonal variations in mood and behavior have been previously reported in modern populations, i.e., in humans relatively isolated from seasonal macro-environmental changes by their artificial microclimate. In contrast, the Old Order Amish generally restrict their use of network electric light and air conditioning in domestic settings and are less shielded from seasonal changes in the macro-environment than the non-Amish. Culturally, Amish men and women have a gender based differential exposure to the natural environment. We thus examined the relationship between seasonal patterns of seasonality and gender in the Old Order Amish
Methods: Responses given by 1265 Amish participants (728 women, 537 men) on Seasonal Pattern Assessment Questionnaires were analyzed for the time of the year when they felt best, felt worst, gained most weight, lost most weight, slept most, slept least, socialized most, and socialized least. Two way repeated measure ANOVAs were used to examine the association of gender with seasonal patterns, with posthoc t tests.
Results: There were significant interactions between gender and seasonal patterns in feeling worst (p=0.002), feeling best (p<0.0001), gaining most weight (p=0.004), socializing most (p=0.022), socializing least (p=0.004), eating least (p<0.0001), and sleeping most (p=0.002).
Men felt significantly worse in July than women (p = 0.008).
Conclusion: Differences in seasonal patterns between men and women may reflect environmental exposure or hormonal changes. Specifically, men may report more worsening in their mood in the summer as a result of farming demands or endocrine changes (e.g. testosterone levels) that may reflect their increased sensitivity to heat. Longitudinal designs with direct measurements, rather than self-report, and analysis of specific weather parameters are planned as next steps.

**NO. 114**

**COURSE OF DEPRESSION SYMPTOMS AND RESPONSE BY CLASS OF ANTIDEPRESSANT**

*Lead Author: Suhayl Nasr, M.D.*
*Co-Author(s): John W. Crayton, M.D., Anand P. Popli, M.D., Burdette Wendt*

**SUMMARY:**

Introduction:Much has been written about the association of certain depression symptoms with response to an antidepressant with specific mechanism of action. However the data supporting this hypothesis has been collected in academic settings rather than in a practice setting where the majority of patients are being treated. In a study of 100 Epidemiologic Catchment Area patients with MDD the 3 most common diagnostic symptoms during a major depressive episode were depressed mood (83%), sleep problems(76%), and trouble thinking (64%). This study did not specify the severity of depression in the surveyed sample. Following is a study of a consecutive series of patients from a rural private psychiatric practice who met criteria for at least moderate depression.
Methods: A retrospective chart review was performed on all patients in a private, outpatient psychiatric clinic. Data collected included patient demographics, medication history, and the results of depression questionnaires (QIDS-16 & PHQ-9) given at each visit. Patients were included in the study if they were diagnosed with unipolar depression and scored a 12 or higher on the QIDS-16 at their initial visit.
Results: 218 patients were included in the study. The time from their initial visit to most recent one was 1.3 (±1.2) years. The average age was 48 (±18)years old. Of the 9 symptoms of depression, each was present in over half of the population at their initial visit. The most common symptom was sleep problems (96%), followed by sadness-89%, lack of energy-83%, lack of concentration-70%, weight or appetite problems-67%, general interest-67%, thoughts of death-59%, self-worth-58%, and restlessness-54%. At their most recent visit, sleep was still the most common complaint, with 58% of patients scoring positive. Restlessness and thoughts of death were the least frequent residual symptoms, with each being present in 27% of the patients. Patients on SSRI's showed significantly better improvement with the symptom of self-worth, with 21% of patients who endorsed it at their initial visit still complaining of it at their most recent visit, compared with 38% of patients not on an SSRI(p<.05). Additionally, 59% patients on no antidepressants still complained of thoughts of death/suicide compared to 36% on SSRI's, SNRI's, or NDRI's (p<0.05).
Conclusions: Problems with sleep was the most frequent complaint of patients with moderate to severe depression at both their initial and most recent visit. Patients on any antidepressant showed significantly better improvement with thoughts of death compared to patients on no antidepressant, and patients on SSRI's showed significantly better improvement with their self-worth.
Reference: Chen LS et al. Empirical Examination of Current Depression Categories in a Population-Based Study: Symptoms, Course, and Risk Factors. Am J Psychiatry 2000;157:573-580

**NO. 115**

**EFFICACY AND TOLERABILITY OF VORTIOXETINE VERSU AGOMELATINE IS INDEPENDENT OF PREVIOUS TREATMENT IN**

**MDD PATIENTS SWITCHED AFTER AN INADEQUATE RESPONSE**

*Lead Author: George I Papakostas, M.D.*
*Co-Author(s): Marianne Dragheim, M.D., Rebecca Z. Nielsen, M.Sc.*

**SUMMARY:**
Objective: Vortioxetine was shown to be superior to agomelatine in a study in adult patients with major depressive disorder (MDD) who had an inadequate response to SSRI/SNRI monotherapy and therefore wished to switch treatment. This analysis investigated if the efficacy and tolerability of vortioxetine treatment was independent of the previous SSRI/SNRI treatment.
Methods: This was a double-blind, randomized, 12-week comparator study where patients were randomized (1:1) to vortioxetine (10-20 mg/day) or agomelatine (25-50 mg/day). The primary efficacy endpoint was the change from baseline to Week 8 in Montgomery-Åsberg Depression Rating Scale (MADRS) total score in the full-analysis set (FAS) analysed by MMRM. The ANCOVA, LOCF was conducted as a sensitivity analysis. The analyses were repeated in subgroups (SSRI/SNRI) based on the previous antidepressant that had inadequately treated the current MDE.
Results: On the pre-defined primary efficacy endpoint (overall study population), vortioxetine (n=252) was statistically significantly superior to agomelatine (n=241) by -2.2 (95% CI: -3.5 to -0.8; p<0.01) MADRS points. Approximately 76% (n=189 [vortioxetine], n=188 [agomelatine]) were previously treated with an SSRI (citalopram, escitalopram, paroxetine, or sertraline) or 23% (n=62 [vortioxetine], n=52 [agomelatine]) with an SNRI (duloxetine or venlafaxine). The baseline characteristics were similar in all subgroups including a mean MADRS total score of approximately 29. The differences between vortioxetine and agomelatine at Week 8 on MADRS total score (FAS, MMRM) was -2.6 (n=164 [vortioxetine], n=150 [agomelatine]) (p<0.01) for patients switching from an SSRI and -1.8 (n=56 [vortioxetine], n=40 [agomelatine]) (ns) for patients switching from an SNRI. Similar results were seen at Week 12, and analysed by ANCOVA, LOCF, as well as these analyses repeated in the subgroups based on the 6 individual previous SSRI or SNRIs. Withdrawal rate and incidence of adverse events (AEs) were similar in the overall study population and in the 2 subgroups regardless of the previous SSRI or SNRI treatment. Comparing vortioxetine and agomelatine in the following 3 groups: overall study population, previously SSRI or SNRI treated, the withdrawal rate was 21% vs 26%, 21% vs 25% and 21% vs 28%, respectively; and AE incidence was 54% vs 53%, 56% vs 53%, and 50% vs 51%, respectively. In the different analyses nausea was the most common AE in the vortioxetine group.
Conclusions: Vortioxetine is superior to agomelatine in the treatment of patients with MDD who had an inadequate response to a single course of SSRI or SNRI monotherapy and is equally well tolerated. The advantage is independent of any of the 6 previous treatments, both divided into class (SSRI or SNRI) and individually (citalopram, escitalopram, paroxetine, sertraline, duloxetine, or venlafaxine).The results of the subgroup analyses support the advantage of switching inadequate responders to vortioxetine.

**NO. 116**

**PREDICTORS OF DEPRESSIVE DISORDERS AMONG U.S. VETERANS**

*Lead Author: Roopali Parikh, M.D.*
*Co-Author(s): Yusef Canaan, M.D., Mario Cuervo, M.D., Juan D. Oms, M.D.*

**SUMMARY:**
Background: Depression, one of the most common and expensive mental disorders, costs the U.S. approximately $66 billion annually. Veterans diagnosed with depression account for slightly more than 14 percent of the total. We sought to describe the demographic and clinical characteristics of U.S. veterans reporting diagnosis of a depressive disorder and determine what characteristics were independently associated with depressive disorders in this population.
Methods: The 2008 Centers for Disease Control's Behavioral Risk Factor Surveillance Survey was utilized to identify a cohort of 6,112 U.S. veterans that reported the presence or absence of a diagnosed depressive disorder. Demographic data and clinical history were recorded in these patients. Univariate and multivariate analyses were performed to identify characteristics predictive of a depressive disorder in this population.
Results: Among 6,112 patients studied, a total of 812 (13.3%) patients reported being diagnosed with a depressive disorder while 5,300 (86.7%) reported no such diagnosis. Patients with a depressive disorder tended to be younger (59 vs 63 years, p<0.001), female (17% vs 8%, p<0.001), unmarried (47% vs 32%, p<0.001), and be unemployed with lower salaries. They were more likely to be uninsured with financial barriers to medical care (13% vs 5%, p<0.001). They also had higher rates of obesity (33% vs 25%, p<0.001), smoking (40% vs 25%, p<0.001), high-risk sexual behavior (3% vs 1%, p=0.009), diabetes (22% vs 15%, p<0.001), prior heart attack (17% vs 12%, p<0.001), prior stroke (11% vs 5%, p<0.001), and anxiety (49% vs 4%, p<0.001). In multivariate analysis, presence of anxiety was the strongest predictor of a depressive disorder (OR 14.94, 95%CI 10.87-20.54). Other independent determinants of a depressive disorder included female gender (OR 2.78, 95%CI 1.82-4.24), marital status, employment, and diabetes (OR 1.77, 95%CI 1.17-2.67).
Conclusions: Female gender, diabetes, marital status, employment, and anxiety are independently associated with presence of a depressive disorder among U.S. veterans. The presence of anxiety should be strongly considered in depression screening of veterans as these two disorders tend to co-exist.

**NO. 117**

**EARLY IMPROVEMENT WITH VILAZODONE IN ADULTS WITH MAJOR DEPRESSIVE DISORDER: POST HOC ANALYSIS OF A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL**

*Lead Author: Ashwin A Patkar, M.D.*
*Co-Author(s): Carl Gommoll, M.Sc., Maju Mathews, M.D., Rene Nunez, M.D., Xiongwen Tang, Ph.D.*

**SUMMARY:**
Introduction: Clinical studies of major depressive disorder (MDD) generally use mean improvements at end of treatment (EOT) to evaluate antidepressant efficacy. Studies have shown, however, that some individuals experience improvements soon after initiating treatment and early symptom improvement has been associated with better long-term outcomes.
Vilazodone is a potent serotonin reuptake inhibitor and 5-HT1A partial agonist approved for the treatment of MDD in adults.

Data from a Phase IV study of vilazodone were analyzed to investigate the effects of early improvement on EOT outcomes.
Methods: Post hoc analysis of an 8-week, randomized double-blind, placebo-controlled, parallel-group study (NCT01473394) of vilazodone 40 mg/day in adult patients with MDD. Early improvement was defined as a ≥20% decrease from baseline in Montgomery-Asberg Depression Rating (MADRS) total score at Week 2. EOT outcomes included: remission (MADRS total score ≤10), sustained response (MADRS total score ≤12 at the last 2 visits during double-blind treatment); mean changes from baseline to Week 8 in MADRS, Hamilton Anxiety Rating Scale (HAMA), and Clinical Global Impressions-Severity (CGI-S) scores, and Clinical Global Impressions-Improvement (CGI-I) score at Week 8. Odds ratios (OR) for remission and sustained response were analyzed using a logistic regression model. Least squares mean differences (LSMDs) between vilazodone patients with or without early improvement were analyzed using a mixed model for repeated measures.
Results: After 2 weeks of double-blind treatment, significantly more patients had early improvement with vilazodone versus placebo (49% vs 35%, P=.003). Patients who experienced early improvement with vilazodone were more likely to achieve remission (OR=6.1, P<.0001) or sustained response (OR=9.0, P<.0001) at EOT than those without early improvement. However, some patients without early improvement still achieved remission (19%) or sustained response (13%) after 8 weeks of vilazodone treatment. As indicated by LSMDs at EOT, patients with early response to vilazodone had significantly greater mean improvements in depressive symptoms (MADRS, -8.0), global status and severity (CGI-I, -0.9; CGI-S, -1.2), and anxiety symptoms (HAMA, -2.9) as compared with patients without early improvements (all P<.0001).
Conclusions: Approximately 50% of patients with MDD experienced improvement within 2 weeks of initiating vilazodone treatment. In addition to greater reductions in symptom severity, these patients had a much greater likelihood of achieving remission or sustained response than those without early improvement. However, approximately 20% of patients without early improvement also achieved remission by end of study. Therefore, early improvement may be a strong indicator of treatment success with vilazodone, although some patients may require longer treatment duration before experiencing clinical benefits. This study was funded by Forest Laboratories, Inc.

**NO. 118**

**A 8-WEEK RANDOMIZED, DOUBLE-BLIND TRIAL COMPARING EFFICACY, SAFETY AND TOLERABILITY OF THREE DIFFERENT DOSE INITIATION STRATEGIES WITH VILAZODONE**

*Lead Author: Ashwin A Patkar, M.D.*
*Co-Author(s): Ashwin A. Patkar, MD; Shilpa Rele, MHA; Robert Millet,MD; Sungman Kim,MD; Jong-Woo Paik,MD; Seonghwan Kim,MD; Megan Shah,PharmD; Prakash S Masand,MD*

**SUMMARY:**

Introduction: Vilazodone, a selective and potent 5HT1a partial agonist and 5HT reuptake inhibitor has been approved for major depressive disorder (MDD) in adults. The primary objective of the study was to compare the efficacy and tolerability of switching to three different doses of vilazodone from equivalent drug of generic SSRIs or SSNRIs in adult subjects with MDD.
Methods: This was an 8-week, randomized, double blind, parallel group, 3-arm trial to compare 10 mg/d, 20 mg/d and 40 mg/d as starting doses of vilazodone (NCT# 01473381). There was no washout phase, prior meds were stopped at the baseline visit and vilazodone was started the next day in adults with MDD. The 10 mg/d and 20 mg/d dose was increased to 40 mg/d by week 3 and week 1 respectively and the 40 mg/d initiation dose continued unchanged. The primary efficacy measure was change in Montgomery-Asberg Depression Rating Scale (MADRS) between the 3 dose groups. The secondary efficacy measures were changes in Clinical Global Impression-Severity(CGI-S), Clinical Global Impression-Improvement(CGI- I) and Hamilton Anxiety Scale (HAM-A). Safety measures were obtained by spontaneously reported adverse events, vital signs recording and laboratory tests. Multivariate tests were used for statistical analysis.
Results: 71 subjects were randomized (n=20 in each group) and 60 subjects completed the study. Overall, there was a significant reduction in MADRS score from baseline (26.08 ±1.1) to week 8 (9.86 ±1.2) in the entire sample (p<.001). Similarly there was a significant improvement in CGI-S (p<.001), CGI-I scores (p<.001) and HAM-A scores (p<.001) from baseline to end of trial. There were no significant differences between the three vilazodone dose initiation groups in changes in MADRS scores (p=0.95) or changes in CGI-S ( p =0.83), CGI-I ( p=0.51) or HAM-A scores ( p=0.61). Dry mouth (n=55), nausea (n=10) and diarrhea (n=5) were most common side effects, with diarrhea reported in 5 subjects in 40 mg/d initiation group. There were no serious adverse events reported.
Conclusions: The present study indicates the potential benefit of switching to vilazodone in patients with MDD who are inadequate responders to SSRIs or SNRIs. There were no meaningful differences in efficacy or tolerability between the 3 different dose initiation strategies with vilazodone, however, diarrhea appeared to be more frequently reported with 40 mg/d dose. Given the modest sample size, larger studies are required to confirm our findings.unding: This study was supported by Forest Research Institute through an Investigator Initiated Award. The presentation does not include any off-label discussion of drugs.

**NO. 119**

**VORTIOXETINE REVERSES IMPAIRMENTS IN SOCIAL RECOGNITION MEMORY INDUCED BY DYSREGULATION OF ACETYLCHOLINE AND GLUTAMATE NEUROTRANSMISSION IN RATS**

*Lead Author: Alan L. Pehrson, Ph.D.*
*Co-Author(s): Connie Sanchez, D.Sc.*

**SUMMARY:**

Introduction: Vortioxetine, a novel multimodal acting antidepressant, modulates glutamate and acetylcholine neurotransmission via its actions at serotonin receptors. Clinical and preclinical data suggest vortioxetine may attenuate cognitive dysfunction in major depressive disorder. Despite strong support for the idea that modulating glutamatergic or cholinergic signaling alters cognitive function, there is little direct evidence that vortioxetine's beneficial cognitive effects are mediated via its effects on these neurotransmitter systems. This study investigated whether vortioxetine can reverse social memory deficits induced by cholinergic or glutamatergic receptor antagonism.
Hypothesis: We predicted vortioxetine would improve social

recognition memory, whether impairments were induced by time, antagonism at muscarinic cholinergic receptors (using scopolamine) or glutamatergic NMDA receptors (using MK-801).
Methods: General social recognition methods: An unfamiliar juvenile rat was introduced into a mature rat's home cage for 5min (Information Trial; IT), then removed for a delay. Upon completion of the delay, the juvenile was returned to the mature rat's cage for 5min (Retention Trial; RT). The amount of time the adult rat spent investigating the juvenile was recorded. Delay induced amnesia: the adult rat was injected with vehicle or 10mg/kg vortioxetine s.c. 1h before the IT, or 3mg/kg donepezil i.p. immediately after the IT. The delay lasted 2h. Drug induced amnesia: the adult rat was injected with vehicle or 10mg/kg vortioxetine s.c. 1h prior to the IT, and then injected with vehicle, 0.25mg/kg scopolamine s.c., or 0.05mg/kg MK-801 s.c. 30min prior to the IT. The delay lasted 30min.
Results: Delay-induced amnesia: Adult rats injected with vehicle (Difference in sec (D) = IT – RT = -3.7; t(11)=0.59,n.s.) or vortioxetine (D = 0.7; t(11)=0.8,n.s.) spent a similar amount of time investigating a juvenile stimulus rat during the IT and RT when separated by 2h, indicating no recognition memory. Donepezil treatment significantly reduced the amount of time spent investigating the juvenile rat during the RT vs. the IT (D=36.5; t(11)=7.2,p<0.0001), indicating improved memory. Drug-induced amnesia: Vehicle-treated rats investigated the juvenile rat significantly less during the RT vs. the IT when separated by 30min (D=19; t(11)=2.3, p<0.05), indicating intact memory. However, adult rats treated with scopolamine (D=8.7; t(11)=1.5,n.s.) or MK-801 (D=-0.2; t(11)=0.1,n.s.) displayed no difference in investigation time during the two trials, indicating impaired memory. Vortioxetine pretreatment before scopolamine (D=26.5; t(11)=3.3,p<0.01) or MK-801 (D=20.6; t(11)=2.4,p<0.05) significantly decreased investigation during the RT vs. the IT.
Conclusions: These data demonstrate that although vortioxetine does not improve social recognition memory in normal rodents, it reverses memory deficits induced by acute acetylcholine and glutamate dysregulation.

**NO. 120**

**ADIPONECTIN AND SEASONALITY OF MOOD AND BEHAVIOR IN THE OLD ORDER AMISH**

*Lead Author: Uttam K. Raheja, M.D.*
*Co-Author(s): Sarah J. Hinman, B.S., Hassan Maclain, B.S., Braxton D. Mitchell, Ph. D., Iqra Mohyuddin, Toni I. Pollin, Ph. D., Teodor T. Postolache, M.D., Gloria M. Reeves, M.D., Kathleen Ryan, M.P.H., Alan R. Shuldiner, M.D., Soren Snitker M.D., Sarah H. Stephens, Ph. D., John Stiller, M.D.*

**SUMMARY:**
Background: Seasonal affective disorder (SAD) is characterized by mood and neurovegetative symptoms in the fall and winter with alleviation in spring and summer. Individuals with SAD also experience increased appetite, carbohydrate cravings and weight, which may be mediated by impaired adiponectin and insulin regulation.
Methods: We evaluated the relationships between global seasonality scores (GSS) and SAD (syndromal or subsyndromal) derived from responses to the Seasonal Pattern Assessment Questionnaire and levels of insulin, glucose, lipids, and adiponectin in 1,306 Old Order Amish adults. Analyses were adjusted for age, sex, household, body mass index (BMI), and family structure and performed using variance component analysis.
Results: Participants with SAD, either syndromal or subsyndromal (N = 34; 2.60%), had significantly lower adiponectin levels (8.76±1.39) than those without SAD (11.93±0.21) after adjustment for age, sex, and BMI p = 0.01). There was no significant association between insulin and SAD (p = 0.44) or between GSS and either adiponectin (p = 0.94) or insulin (p = 0.65).
Conclusions: To our knowledge, this is the first study of the relationship between adiponectin and SAD. The results are consistent with a recent study showing the ability of adiponectin to prevent, attenuate and reverse depressive-like behavior in animal models. Replication and extension of these findings may implicate adiponectin as a novel target for therapeutic intervention in SAD.

**NO. 121**

**THE EFFICACY OF VILAZODONE IN IMPROVING ANXIETY SYMPTOMS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: POST HOC ANALYSES OF A PHASE IV TRIAL**

*Lead Author: Angelo Sambunaris, M.D.*
*Co-Author(s): Carl Gommoll, M.Sc., Maju Mathews, M.D., Rene Nunez, M.D., Adam Ruth, Ph.D., Xiongwen Tang, Ph.D.*

**SUMMARY:**
Background: Anxiety symptoms in patients with major depressive disorder (MDD) contributes to overall disease burden and is associated with reduced treatment efficacy. Vilazodone, a potent serotonin reuptake inhibitor and 5-HT1A receptor partial agonist, is approved by the US Food and Drug Administration for the treatment of MDD in adults. This post hoc analysis of Phase IV trial evaluated the efficacy of vilazodone on anxiety symptoms associated with MDD.
Methods: Post hoc analyses were conducted on an 8-week, Phase IV, multicenter, randomized, placebo-controlled, double-blind trial (NCT01473394) of vilazodone 40 mg/day in adult outpatients with MDD. The primary efficacy outcome was MADRS change from baseline to Week 8; the Hamilton Anxiety Rating Scale (HAMA) was a secondary measure.
Post hoc analyses evaluated change from baseline to Week 8 on the HAMA subscales (Psychic Anxiety [Items 1-6 and 14] and Somatic Anxiety [Items 7-13]) and the HAMA individual items. Least squares mean differences (LSMDs) were calculated using a mixed effects model for repeated measures (MMRM).
Results: The intent-to-treat (ITT) population comprised 253 vilazodone and 252 placebo patients. For both treatment groups, mean baseline HAMA total scores were approximately 15. Patients had much higher Psychic Anxiety subscale scores relative to Somatic Anxiety subscale scores at baseline (approximately 11 vs 4, respectively).
Significantly greater improvement in HAMA total score was seen in vilazodone patients (-7.1) relative to placebo (-5.0, LSMD -2.1, P<.0001). Similarly, the vilazodone group improved significantly more than placebo on the HAMA Psychic Anxiety subscale (-5.3 vs -3.5, LSMD -1.81, P<.0001) and on all Psychic Anxiety subscale items (Anxious Mood, LSMD -0.31, P<.0001; Tension, LSMD -0.44, P<.0001; Insomnia, LSMD -0.22, P=.014; Intellectual, LSMD -0.29, P=.0003; Depressed Mood, LSMD -0.43, P<.0001), except Fears (LSMD -0.04, P=.326) and Behavior at Interview (LSMD -0.09, P=.085).

HAMA Somatic Anxiety subscale scores decreased slightly more for vilazodone vs placebo (-1.8 vs -1.5), but differences were not statistically significant. Improvement in Somatic items was similar for vilazodone vs placebo (Somatic-Muscular -0.4 vs -0.3, Somatic-Sensory -0.2 vs -0.2, Cardiovascular Symptoms -0.1 vs -0.1, Respiratory Symptoms -0.3 vs -0.2, Gastrointestinal Symptoms -0.2 vs -0.2, Genitourinary Symptoms -0.4 vs -0.3, Autonomic Symptoms -0.2 vs -0.2).
Discussion: In these post hoc analyses, vilazodone-treated patients experienced significantly greater improvement relative to placebo on HAMA total score, as well as on the HAMA Psychic Anxiety subscale and most Psychic Anxiety items. The small effect on HAMA Somatic subscale and item scores is most likely due to relatively low scores at baseline. In summary, these results further support the efficacy of vilazodone for anxiety symptoms associated with MDD. This study was funded by Forest Laboratories, Inc.

**NO. 122**

**VORTIOXETINE, A MULTIMODAL ACTING ANTIDEPRESSANT WITH DISTINCT PHARMACOLOGICAL PROPERTIES A COMPARATIVE PRECLINICAL STUDY VERSUS SRIS**

*Lead Author: Connie Sanchez, D.Sc.*
*Co-Author(s): Elena Dale, Ph.D., Yan Li, Ph.D., Steve C. Leiser, Ph.D., Maria Gulinello, Ph.D.*

**SUMMARY:**

Objective: Vortioxetine is a multimodal-acting antidepressant working through several 5-HT targets. It is a 5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist and inhibitor of the 5-HT transporter (SERT) in vitro (1,2). It exerts antidepressant- and anxiolytic-like effects and reverses memory deficits in preclinical models (1,3,4). The aim of this investigation was to compare vortioxetine with SSRIs or SNRIs across in vitro and in vivo rat assays predictive of anxiolytic and antidepressant activity and effects on cognitive function.
Methods: Effects of vortioxetine and escitalopram on 5-HT-induced spontaneous inhibitory post-synaptic currents (sIPSCs) were recorded in CA1 pyramidal cells of hippocampus slices using whole cell patch recordings. Since theta rhythms are involved in memory formation and 5-HT3 receptor-expressing interneurons regulate the strength of theta rhythms by controlling the output of pyramidal cells, theta rhythms were recorded in vivo using electroencephalographic recordings. Acute anxiolytic activity was measured as reduction of conditioned fear-induced ultrasonic (22 kHz) vocalization and increase in social interaction, measured as the time pairs of unfamiliar rats spend in active interaction under aversive light intensity. Antidepressant activity was measured by means of a forced swim test in female rats during a progesterone withdrawal (PWD) phase.
Results: Vortioxetine blocked 5-HT-induced increase in sIPSCs, likely through blockade of 5-HT3 receptors on interneurons; escitalopram was inactive. Vortioxetine increased theta power during the active wake state in vivo; escitalopram and duloxetine were inactive. Vortioxetine showed acute anxiolytic activity in both assays; duloxetine and paroxetine were inactive in the conditioned fear and social interaction tests, respectively. Chronic dosing with vortioxetine but not fluoxetine or duloxetine produced an antidepressant-like effect during PWD. Furthermore, in rats chronically treated with fluoxetine and subsequently exposed to PWD addition of a 5HT1A receptor agonist or a 5-HT3 or 5-HT7 receptor antagonist failed to produce an antidepressant-like activity. The latter may suggest that a complex interaction between SERT inhibition and >1 receptor activity is required to achieve the antidepressant-like activity of vortioxetine.
Conclusions: The preclinical profile of vortioxetine in assays predictive of anxiolytic and antidepressant activity and positive effects on cognitive function differs from those of SSRIs and SNRIs, indicating that vortioxetine's receptor mechanisms are critical for its pharmacodynamic activities.

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**NO. 123**

**THE EFFECTS OF DEXTROMETHORPHAN/LOW-DOSE QUINIDINE COMBINATION (DMQ) ON DEPRESSIVE SYMPTOMS IN PATIENTS WITH PSEUDOBULBAR AFFECT**

*Lead Author: Joao Siffert, M.D.*
*Co-Author(s): Ronald Thisted, Ph.D.*

**SUMMARY:**

Introduction: Major depressive disorder (MDD) is a prevalent and disabling mental disorder. Despite availability of multiple antidepressants with diverse pharmacology, approximately 30%-65% of MDD patients are unresponsive to the first antidepressant prescribed, and 15%-30% are unresponsive to multiple medications [1]. New treatments with novel mechanisms of action for MDD are needed. Dextromethorphan (DM) is a low-to-moderate affinity, noncompetitive N-methyl-D-aspartate (NMDA) receptor antagonist with rapid on/off rate, and is a serotonin and norepinephrine reuptake inhibitor [2]. In addition, DM is a sigma-1 receptor agonist [2]. Monoamine reuptake inhibition is a well-established mechanism of several antidepressants. Although NMDA activity is not a traditional therapeutic target for depression, ketamine, a moderate affinity NMDA receptor antagonist, has shown a rapid antidepressant effect in refractory MDD patients [3,4]. Likewise, sigma-1 agonism may have antidepressant activity [5], and may account for the antidepressant augmenting effect of drugs such as fluvoxamine [6]. The pivotal trial of DMQ for treatment of pseudobulbar affect (PBA) used the Beck Depression Inventory-II (BDI-II) to screen out subjects with depression (BDI-II scores >19) [7]. BDI-II was also administered at baseline and Week 12 (study end) as a secondary outcome [7]. Objective: To assess the antidepressant effect of DMQ in PBA patients with depressive symptoms. Methods: A post hoc analysis was conducted to assess DMQ effects on depressive symptoms of PBA patients in the pivotal trial. Patients had a clinical diagnosis of PBA secondary to amyotrophic lateral sclerosis or multiple sclerosis and a baseline BDI-II score >10 and ≤19 , indicating depressive symptoms but not major depression. Patients were randomized to DMQ 20/10 mg, DMQ 30/10 mg, or placebo, twice daily for 12 weeks.
Results: Of the 326 randomized patients, 129 had baseline BDI-II >10 and ≤19 (n=43, DMQ 20/10; n=38, DMQ 30/10 mg; n=48, placebo). At endpoint, mean BDI-II scores were numeri-

cally but not significantly improved for DMQ in a dose-related fashion: DMQ 30/10 mg (-3.4; P=0.08) and DMQ 20/10 mg (-2.9; P=0.15), compared with placebo (-1.1). In the subset of all patients with baseline BDI-II ≥18 (n=30), DMQ 30/10 mg was associated with a significant mean improvement (-8.6; P=0.03), compared with placebo (-0.5). Conclusion: DMQ reduced depressive symptoms in PBA patients. These data, taken together with DM pharmacology, warrant further study of DMQ as a potential antidepressant. A phase 2 study is planned.

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**NO. 124**

**HISTAMINE AND COGNITION: CHRONIC TREATMENT WITH THE MULTIMODAL ACTING ANTIDEPRESSANT VORTIOXETINE ACTIVATES THE CENTRAL HISTAMINERGIC SYSTEM IN RATS**

*Lead Author: Gennady Smagin, M.D., Ph.D.*
*Co-Author(s): Dekun Song, MD, David P. Budac, Ph.D., Alan Perch, Ph.D., Yan Li, Ph.D., Connie Sánchez, Ph.D.*

**SUMMARY:**

Objectives: Vortioxetine, a multimodal acting antidepressant, is a 5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist and 5-HTT inhibitor. Preclinical studies and clinical studies in MDD patients indicate that vortioxetine restore cognitive dysfunctions [1, 2]. While not fully understood, vortioxetine's effect on cognitive function likely involves modulation of several neurotransmitter systems [1]. We have previously shown that acute vortioxetine increased extracellular histamine (HA) in the rat prefrontal cortex [1]. Since HA is known to affect memory and learning positively [3], the scope of the present investigation was to study vortioxetine's effect on HA in the rat prefrontal cortex (PFC) and ventral hippocampus (VH) after chronic dosing.
Methods: Rats were implanted with guide cannulas for microdialysis in the PFC and VH. After recovery, animals received vortioxetine formulated in food pellets, 18 mg/10 g food. This concentration reaches pharmacologically active levels of target occupancies. Control animal received standard chow. On day 15, microdialysis probes (CMA/12, 4 mm, PAES, MWKO 100 kDa) were inserted into the respective guide cannulas in awake rats. Each animal was placed into a  system for freely moving animals equipped with a 5-channel swivel. The probes were perfused with constant flow-rate of 1.5 µl/min with sterile artificial CSF solution (Perfusion Fluid CNS, CMA Microdialysis, Harvard Biosciences, USA). Following 4 hours stabilization, a total of 12 samples were collected in 20 min intervals and used for determination of basal extracellular levels of HA by LC/MS method.
Results: In control animals HA concentrations in the microdialysates were 0.6±0.03 in the PFC and 0.46±0.05 ng/ml in VH. In vortioxetine-treated rats concentrations were significantly higher, 0.95±0.06 in PFC and 0.85±0.13 in VH (P<0.05) than controls. The role of HA is gaining increasing attention, and many recent results indicate that the HA-ergic system influences learning and memory by modulating the release of ACh, although some cognitive effects of HA and HA-ergic agents occur independently of ACh3. The regulation of ACh tone in different brain areas by neuronal HA also encompasses functions other than cognition. HA promotes wakefulness (attention) by tonic control over sleep-generating mechanisms in the preoptic/anterior hypothalamus, and cholinergic neurons seem to be implicated.
Conclusion: Vortioxetine produced a sustained increase of HA in two key brain areas for cognitive function. We hypothesize that histaminergic neurotransmission may contribute to vortioxetine's positive effects on cognitive function.

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**NO. 125**

**PERSONALITY TRAITS AS PREDICTORS FOR THE OUTCOME OF LITHIUM AUGMENTATION IN TREATMENT-RESISTANT DEPRESSION**

*Lead Author: Michio Takahashi, M.A.*
*Co-Author(s): Suzuki M, M.D., Muneoka K, M.D., Ph.D., Sato K, M.D., Ph.D., Shirayama Y, M.D., Ph.D.*

**SUMMARY:**

INTRODUCTION:
Many studies have reported that patients with major depressive disorders (MDD) show personality traits such as, high neuroticism, low extraversion and low conscientiousness on the NEO, and high harm avoidance, low self-directedness and cooperativeness on the Temperament and Character Inventory (TCI). Recently, we reported that patients with treatment-resistant depression showed differential characteristics of low openness on the NEO, and low reward dependence and cooperativeness on the TCI (1,2). Here, we describe differences between patients with good and poor outcomes after lithium augmentation therapy.
METHODS:
We recruited 21 antidepressant treatment-resistant depressive patients (mean age, 38.5±9.2; HAM-D score, 19.9±4.3) who met the DSM-Ⅳ criteria for MDD (first episode). Inclusion criteria required symptoms of moderate depression after therapy with at least two antidepressants, for 8 weeks. We administered TCI and NEO to participants before lithium augmentation therapy. Patients were classified into good or bad responders, depending on whether they achieved remission 8 months after add-on lithium therapy. Remission was scored at 7 or less on the 17-item HAM-D.
RESULTS:
Of the 21 outpatients with treatment-resistant depression, 10 patients (mean age, 39.8±9.3) were good responders (remission) while 11 (mean age, 37.8±7.7) were poor responders. HAM-D scores, duration of illness and the number of antidepressant treatments were not significantly different between the two groups, before lithium augmentation. The average maintenance dose of lithium at 8 months was 640±80 mg/day in the good outcome group and 600±85 mg/day in the poor outcome group. MANOVA indicated a significant group effect on NEO scores (F=5.501, p=0.005). Subsequent student t-tests

showed higher openness on the NEO in the good outcome group compared with the poor outcome group (p=0.009), before lithium augmentation. Although MANOVA failed to indicate a significant group effect on TCI scores (F=1.736, p=0.185), subsequent student t-tests showed that the good outcome group had higher cooperativeness on the TCI (p=0.013), compared with the poor outcome group, before lithium augmentation.
DISCUSSION / CONCLUSION:
Low openness on the NEO, and to a lesser extent, low cooperativeness on the TCI may be predictors for poor responsiveness to lithium augmentation in treatment-resistant depression. This study suggests that personality traits should be considered risk factors in lithium augmentation, for antidepressant treatment-resistant depression.
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**NO. 126**

**EFFECTS OF VILAZODONE ON DEPRESSION SYMPTOMS: CATEGORY SHIFT ANALYSIS OF MADRS ITEMS FROM A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL**

*Lead Author: Michael E. Thase, M.D.*
*Co-Author(s): Carl Gommoll, M.Sc., Maju Mathews, M.D., Rene Nunez, M.D., Adam Ruth, Ph.D., Xiongwen Tang, Ph.D.*

**SUMMARY:**
Introduction: Vilazodone is a serotonin reuptake inhibitor and 5-HT1A receptor partial agonist FDA-approved for the treatment of major depressive disorder (MDD) in adults. In previous studies, patients with MDD who received vilazodone 40 mg/day had significantly greater overall symptom improvement compared with placebo as measured by Montgomery-Asberg Depression Rating Scale total score (MADRS). The MADRS comprises 10 items, each scored from 0 to 6, with higher score indicating greater severity. The objective of this analysis was to assess clinically relevant symptom improvement in individual MADRS items by evaluating baseline to end of study (EOS) shifts from more to less severe symptom categories.
Methods: Post hoc analysis of data from adult patients with MDD (placebo, n=206; vilazodone, n=210) who completed an 8-week, randomized double-blind, placebo-controlled, parallel-group study of vilazodone 40 mg/day (NCT01473394). For each MADRS item, two category shifts were used to evaluate the effects of treatment on symptoms: item score ≥2 (mild to severe symptoms) at baseline to <2 (no or minimal symptoms) at EOS; and item score ≥4 (moderate to severe symptoms) at baseline to ≤2 (mild symptoms to no symptoms) at EOS. Odds ratios (OR) vs placebo and P-values for category shifts were analyzed using logistic regression.
Results: Vilazodone patients were significantly more likely than placebo patients to show categorical improvement from ≥2 to <2 on all 10 MADRS items (OR=1.9 to 4.0, P<.01 for all MADRS items). More than half of vilazodone patients with baseline scores >2 had no or minimal symptoms (score <2) at EOS on MADRS items: Apparent Sadness (51% for vilazodone vs 33% for placebo, OR=2.1, P<.001); Reduced Appetite (67% vs 42%, OR=2.9, P<.001); Pessimistic Thoughts (51% vs 35%, OR=1.9, P=.002); and Suicidal Thoughts (86% vs 61%, OR=4.0, P=.004). In patients with greater symptom severity at baseline (item score ≥4), a significantly greater percentage of vilazodone vs placebo patients had mild to no symptoms (score ≤2) after treatment on most MADRS items: Apparent Sadness (72% vs 51%, OR=2.5, P<.001); Reported Sadness (66% vs 50%, OR=2.0, P=.003); Inner Tension (62% vs 44%, OR=2.1, P=.032); Reduced Appetite (81% vs 41%, OR=6.1, P=.001); Concentration Difficulties (60% vs 44%, OR=1.9, P=.010); Lassitude (70% vs 48%, OR=2.5, P<.001); Inability to Feel (64% vs 43%, OR=2.3, P<.001); and Pessimistic Thoughts (65% vs 38%, OR=2.9, P=.007). Due to the low number of patients with moderate or severe Suicidal Thoughts (n=8), OR was not evaluable for this item.
Conclusions: This post hoc analysis of a Phase IV study demonstrates that vilazodone treatment may improve a range of depressive symptoms in adult patients with MDD. Patients who received vilazodone relative to placebo had a significantly greater odds of achieving no/minimal symptoms after 8 weeks of treatment than those who received placebo. This study was funded by Forest Laboratories, Inc.

**NO. 127**

**EFFICACY OF VORTIOXETINE VERSUS PLACEBO IN ADULTS WITH MAJOR DEPRESSIVE DISORDER: META-ANALYSES OF MADRS SINGLE ITEMS FROM 9 SHORT-TERM STUDIES**

*Lead Author: Michael E. Thase, M.D.*
*Co-Author(s): Marianne Dragheim, M.D., Henrik Loft, M.Sc. & Ph.D, Atul R. Mahableshwarkar, M.D.*

**SUMMARY:**
Introduction: Vortioxetine is an antidepressant recently approved for the treatment of adults with major depressive disorder (MDD). Its mechanism of action is thought to be related to its multimodal activity: direct modulation of receptor activity and inhibition of the serotonin transporter.
Objective: This analysis was designed to evaluate the efficacy profile of vortioxetine (5-20mg/day) vs placebo (PBO) on clinical symptoms of depression in MDD patients, assessed by the change from baseline in the 10 items of the Montgomery-Åsberg Depression Rating Scale (MADRS) at the end of the study period.
Methods: Analyses were based on data from 10 randomized, double-blind, short-term, placebo-controlled studies in MDD patients where vortioxetine (5-20mg/day) was compared to PBO: 9 adult studies and 1 elderly patient study were performed. All patients met the DSM-IV criteria for a major depressive episode (MDE) and were at least 18 years old, with a baseline MADRS total score of >22 (1 study), 26, or 30 (2 studies). Changes from baseline to study endpoint (week 6/8) on MADRS total score and each of the 10 MADRS single items were analysed for each of the 10 MDD trials based on the full-analysis set (FAS) and using the mixed model for repeated measures (MMRM) analysis. The obtained estimated treatment differences between vortioxetine (5-20mg/day) and PBO for each of the 9 trials in adults were used as input for a random effects meta-analysis for each item.
Results: A total of 3203 patients were included in the meta-analysis: PBO, n=1215; Vortioxetine 5mg, n=714; 10mg, n=571;

15mg, n=344; and 20mg, n=359. A consistent dose response was observed across the therapeutic dose range of 5 to 20mg in the individual trials whenever more than one dose was studied in the same trial, which was supported by the meta-analysis. The mean difference from PBO for vortioxetine in change from baseline to week 6/8 in MADRS total score was -2.6 (5mg, p<0.01), -3.5 (10mg, p<0.001), -2.6 (15mg, p=NS) and -4.5 points (20mg, p<0.001) (FAS, MMRM). A dose-related improvement on all MADRS single items was observed for vortioxetine (5, 10, 15, & 20mg, respectively) versus PBO (Apparent Sadness, -0.35, -0.48, -0.41, & -0.64; Reported Sadness, -0.3, -0.49, -0.46, & -0.66; Inner Tension, -0.24, -0.43, -0.21, & -0.4; Reduced Sleep, -0.35, -0.39, -0.18, & -0.48; Reduced Appetite, -0.19, -0.23, -0.17, & -0.29; Concentration Difficulties, -0.23, -0.22, -0.37, & -0.48; Lassitude, -0.25, -0.3, -0.26, & -0.41; Inability to Feel, -0.33, -0.4, -0.24, & -0.52; Pessimistic Thoughts, -0.22, -0.34, -0.21, & -0.53; and Suicidal Thoughts, -0.08; -0.11, -0.14, & -0.14). Similar results were found in the study including elderly patients.
Conclusion: In this meta-analysis of 9 short-term MDD studies, we found that vortioxetine had a broad antidepressant effect, as shown by improvements on all individual MADRS items, and that the magnitude of the overall effect was dose-dependent, increasing with dose.

**NO. 128**

**ADJUNCTIVE BREXPIPRAZOLE (OPC-34712) IN MAJOR DEPRESSIVE DISORDER (MDD): EFFICACY OVER A RANGE OF OUTCOMES**

*Lead Author: Michael E. Thase, M.D.*
*Co-Author(s): Carole Augustine, B.A., William H. Carson, M.D., Mary Hobart, Ph.D., Robert D. McQuade, Ph.D., Margaretta Nyilas, M.D., Raymond Sanchez, M.D., James M. Youakim, M.D., Peter Zhang, Ph.D.*

**SUMMARY:**
Background:
Brexpiprazole is a serotonin-dopamine activity modulator that is a partial agonist at 5-HT1A and dopamine D2 receptors at similar potency, and an antagonist at 5-HT2A and noradrenaline alpha1B receptors. In this phase 3 randomized, placebo-controlled trial, brexpiprazole demonstrated efficacy and good tolerability as adjunctive treatment for patients with MDD who demonstrated inadequate response to antidepressant treatment (ADT).
Objectives:
To evaluate multiple efficacy outcomes of adjunctive treatment with brexpiprazole versus placebo in patients with MDD who demonstrated inadequate response to ADT.
Methods:
This trial was comprised of 3 phases: a screening phase (7–28 days); a prospective phase (Phase A): 8-week, single-blind placebo plus an investigator-determined, open-label ADT; a randomized phase (Phase B): 6-week, double-blind, adjunctive brexpiprazole (2 mg/day) vs. placebo in patients with an incomplete response to ADT. In addition to the primary analysis, a pre-specified per protocol analysis was conducted based on the amended final protocol (which specified more stringent criteria for randomization). Efficacy was measured using the MADRS total score, the Sheehan Disability scale (SDS), the CGI-S, HAM-D 17, CGI-I and HAM-A scores. Changes from randomization to week 6 in SDS subscales and CGI-S scores were analyzed using a mixed model repeated measures (MMRM) analysis.
Results:
A total of 379 patients were randomized. The change in MADRS showed a 3.1 point treatment effect by the primary analysis (p<0.001) and a 3.2 point treatment effect by the amended per protocol analysis (p<0.001). Similar statistically robust findings were observed on the total SDS, as well as the SDS family life and social life subscale scores, regardless of the analysis. Results of other secondary efficacy measures (change in CGI-S: -0.91 vs -0.58, p<0.001; change in HAM-D 17 Total Score: -5.89 vs -3.55; p≤0.0001; mean CGI-I score: 2.74 vs 3.13; p<0.001) confirmed the effect of adjunctive brexpiprazole on reducing depressive symptoms during randomized treatment; similar results were observed with the per protocol analysis and were confirmed by additional sensitivity analyses. The responder rate was greater for subjects receiving adjunctive brexpiprazole compared with those who received placebo+ADT on both MADRS (23.5% vs 14.7%, p<0.05) and CGI improvement scales (44.4% vs 27.7%, p<0.001). During that period, a significant difference between adjunctive brexpiprazole and placebo+ADT was also observed on change in HAM-A total score (-3.94 vs -2.77; p<0.05).
Conclusions:
In addition to clinical benefits on depressive symptoms, adjunctive brexpiprazole improved social functioning in patients with MDD who demonstrated inadequate response to ADT.

**NO. 129**

**ROLE OF THE NOVEL MULTIMODAL ANTIDEPRESSANT VORTIOXETINE IN REGULATION OF SYNAPTIC MARKER EXPRESSION AND DENDRITIC BRANCHING**

*Lead Author: Jessica A. Waller, Ph.D.*
*Co-Author(s): Denis J. David, Ph.D., Kristian Gaarn du Jardin, Yan Li, Ph.D., Connie Sanchez, Ph.D., Gregers Wegener, Ph.D.*

**SUMMARY:**
Introduction: Vortioxetine is a novel antidepressant with a multimodal mechanism of action: it is a SERT inhibitor, a 5-HT1A agonist, 5-HT1B partial agonist and an antagonist at 5-HT1D, 5-HT3 and 5-HT7 receptors. Clinical studies indicate that vortioxetine may alleviate cognitive dysfunction in patients with major depressive disorder. In preclinical studies, vortioxetine enhances long-term potentiation, a cellular correlate of neuroplasticity, which underlies learning and memory. However, the molecular mechanisms through which vortioxetine exerts these effects on cognitive function have not been studied. We examined the effects of vortioxetine on mRNA levels of markers of synaptic plasticity and on dendritic branching in different animal models.
Hypothesis: Vortioxetine induces activation of targets and signaling pathways implicated in neuroplasticity to enhance cognitive function.
Methods: 1) Acute studies: Adult male Sprague-Dawley rats received vehicle, vortioxetine (10 mg/kg, i.p.) or the SSRI fluoxetine (10 mg/kg, i.p.), and mRNA levels of targets related to neuroplasticity were measured in frontal cortex and hippocampus, at 2, 8, 12 and 27 h post-injection, by quantitative real-time PCR (qPCR) and western blot analysis. 2) Chronic studies: Old female C57BL mice received chronic (1 month) treatment of vehicle, vortioxetine (10mg/kg/day), or fluoxetine (16 mg/

kg/day). mRNA levels of neuroplasticity genes were measured in the hippocampus using qPCR. In a separate study to measure dendritic branching, young adult male 129S6/SvEvTac mice were treated for 14 days with vehicle, vortioxetine (20 mg/kg, p.o.), or fluoxetine (18 mg/kg, p.o.). Hippocampal dendrites were visualized with doublecortin (DCX) labeling.
Results: Vortioxetine treatment led to elevated mRNA levels of various genes involved in protein synthesis and synaptic plasticity. In adult rats, acute vortioxetine increased mRNA levels of mTOR, the dendritic spine marker spinophilin, the metabotropic glutamate receptor mGluR1, and the scaffold protein HOMER3, in the frontal cortex 8 h after dosing. Furthermore, chronic vortioxetine increased mRNA levels of the scaffold protein SHANK1, spinophilin, and the adhesion protein neuroligin-2 in old female mice. Chronic vortioxetine treatment also significantly increased the number of DCX-positive cells with tertiary dendrites, as well as dendritic length and dendritic branching in the hippocampus. The SSRI fluoxetine was ineffective in all of these studies.
Conclusions and Discussion: The multimodal antidepressant vortioxetine, in contrast to the SSRI fluoxetine, promotes the transcription of genes involved in neuroplasticity and induces dendritic maturation and branching in various animal models. These results suggest that the direct activity of vortioxetine at 5-HT receptors may induce activation of signaling cascades involved in synaptic plasticity, leading to improved cognitive function (du Jardin et al., Eur Neuropsychopharmacol, 2013).

**NO. 130**

**THE GRID-HAMD: HAS IT FULFILLED ITS PROMISE? (AN INTERNATIONAL STUDY)**

*Lead Author: Janet B.W. Williams, Ph.D.*
*Co-Author(s): Matej Ondrus, M.D., Melanie Rishton, M.Sc., Jennie Persson, M.Sc., Marlene Popescu, M.D., Risto Valjakka, M.Psych.*

**SUMMARY:**

Introduction-The Hamilton Depression Rating Scale (HAM-D) has been the target of many critiques. The GRID-HAMD was developed to address these and improve administration of the HAM-D. The GRID-HAMD provides a novel grid scoring structure separating frequency and intensity to allow clinicians to rate these as independent axes, and provides a structured interview guide and scoring conventions for each item on the same page. Finally, the GRID-HAMD presents revised anchor points for problematic or inconsistently rated items. The GRID-HAMD has been available for five years and has been used as the major outcome measure for several large clinical trials. Methods-The survey was distributed to 74 experienced clinical raters in July 2013. Statements about the GRID-HAMD were rated on a seven point scale from strongly disagree (1) to strongly agree (7). Questions about usability and ease of use, the new page layout, revised item wordings and grid format were included. Finally, four statements asked raters to compare the GRID-HAMD with the SIGH-D, with a response from 1=GRID-HAMD to 7=SIGH-D. Results-Sixty questionnaires were completed (81%). Half (53%) of the respondents live in Europe, 40% in the US, and the rest in Russia (5%) and South Africa (2%). All reported at least 3 years' experience assessing depression, and 81% reported more than 7 years. Nearly all (96.5%) (96.5%) had administered the GRID-HAMD 10 or more times. Most raters agreed that the wording of questions in the GRID-HAMD made it easy to administer (77%), the conventions were clear (82%) and helpful (86%), and the guidelines for rating symptom intensity were clear (79%). Fewer rated that "it is easy to decide on a frequency level" (61%). A large majority (89%) thought that "Having the scoring conventions integrated into the interview guide has made scoring easier." 75% agreed that "Assessing symptom intensity and frequency separately makes it easier to score the items." 71% agreed "Experience with the GRID scoring system has helped me balance symptom intensity and frequency when scoring other scales." The section comparing the GRID-HAMD to the SIGH-D was completed by raters with experience using both scales (N=44). More than half (54%) of raters preferred the graphical layout of the GRID to the SIGH-D. A slightly higher percentage preferred the SIGH-D (50% vs. 45%) for its "ease of use" and "efficiency" (39% vs. 36%). Finally, slightly more raters expressed "overall preference for the SIGH-D" (45% vs. 43%). Conclusions and Discussion-The GRID-HAMD is well accepted by clinical raters. Raters positively endorsed its new grid format with separate ratings for symptom intensity and frequency, and the revised anchor points. They clearly prefer the graphical layout with each item, its interview questions, and conventions all on the same page. Surprisingly, however, raters indicated an overall preference for the SIGH-D versus the GRID-HAMD. Research costs were fully funded by MedAvante, Inc.

**NO. 131**

**ATTACHMENT STYLES AND CHILDHOOD TRAUMA IN PSYCHOGENIC NONEPILEPTIC SEIZURES**

*Lead Author: Tougma Devetzioglou, M.D.*
*Co-Author(s): Ejder Yildirim, M.D., Nesrin Buket Tomruk, M.D., Ayten Ceyhan Dirican, M.D., Nihat Alpay, M.D.*

**SUMMARY:**

Background and Aim: The etiological factors of psychogenic nonepileptic seizures (PNES) have not yet been clearly defined [1]. Research regarding the attachment patterns of patients presenting with PNES remain restricted [2,3]. This study aims to find an etiological link between psychological factors and psychogenic seizures and to outline group differences between epileptic patients and patients psychogenic nonepileptic seizure in terms of attachment, childhood trauma, coping, dissociative experiences and somatization.
Method: The present study compared 40 patients diagnosed with PNES with 42, age and education level matched, patients with confirmed epilepsy. A Sociodemographic and Clinical Data Form, Structured Clinical Interview for Axis I Disorders (SCID-I), Experiences in Close Relationships Questionnaire (ECR), Childhood Trauma Questionnaire (CTQ), Dissociative Experiences Scale (DES), Symptom Interpretation Questionnaire (SIQ) were applied to participants.
Results: Statistical analysis revealed that insecure attachment was more prominent in PNES with fearful and dismissing attachment styles occuring more frequently. ECR avoidance scores were also significantly higher in this group. Moreover, childhood traumas, COPE behavioral disengagement, dissociation scores and SIQ psychologizing and somatizing subscale scores were significantly higher in psyhogenic seizures. In the latter, ECR avoidance and anxiety scores correlated with coping strategies. Further statistical analysis showed that early

travmatic experiences and dissociation predicted psychogenic nonepileptic seizures.
Conclusion: According to this study, patients with psychogenic nonepileptic seizures are characterized with avoidant attachment tendencies and incesure attachment styles more frequently than epileptic patients. The findings suggest a link between early developmental factors such as attachment patterns and childhood traumas and psychogenic nonepileptic seizures.

**NO. 132**

**EFFECT OF GENDER REASSIGNMENT HORMONE THERAPY ON SLEEP ARCHITECTURE**

*Lead Author: Evalinda Barron, M.D.*
*Co-Author(s): Santana Daniel Ph.D, Salin J. Rafael M.D, Ph.D.*

**SUMMARY:**

Background: Transsexualism is defined as the belief in which an individual identifies with the opposite gender to their biological sex , desire to live and be accepted as such, is characterized by a mismatch between gender identity and biological sex. Both the neurobiology related to transsexuality , how hormone administration affects the functioning of the brain structures involved in gender identity are still unknown . However, it has been found that transsexuals have neuropsychological testing scores corresponding to the gender with which they identify, the brain structures such as the hypothalamus and suprachiasmatic nucleus are comparable. These structures regulate circadian cycles, which could also have a generic dimorphism in transsexual subjects. Hypothesis: If hormone therapy transgender reassignment with conjugated estrogens administered for six months, have an effect on the neurophysiology of these subjects, then we will find changes in sleep architecture. Primary Objectives: Determine the changes in sleep architecture after six months of hormone therapy. Methodology : Six subjects diagnosed with gender identity disorder according to DSM IV- TR, who met eligibility criteria were recruited Harry Benjamin : With selected individuals complete history was made , psychiatric diagnoses were confirmed with SCID SCID I and II , basal levels of sex and thyroid hormones was measured and we made a polysomnography to describe the architecture of basal sleep. Was administered hormone reassignment therapy with conjugated estrogens ( 0.625 mg / d ) and retest polysomnography at 24 weeks. Persons not trasexuales control which was performed polysomnography. Statistical analysis: Kolmogorov -Smirnov test was used to check normality , then a general linear model for repeated measures to compare each of the variables of baseline sleep, the three and six months , an analysis of Pearson correlation between hormone levels was performed Finally, an ANOVA test was performed for the sleep variables between subjects and control subjects transsexual Results: The proportion of N2 which shows increases ; differences between transsexual women with 6 months of hormone reassignment therapy , and the other 3 groups was present. Discussion : Whereas the area involved in gender identity disorder is found in the hypothalamus , which regulates sleep area and a high involvement in circadian cycles was important to study its relevance in transsexual patients has been demonstrated hormonal influence on the sleep -wake cycle , but our hypothesis was based on the dimorphism between men and women in sleep architecture predict the pattern and changing it in transsexual subjects was mostly theoretical since this the first study on this. Conclusions. There is a dependence between sex hormone levels and sleep architecture in transsexual subjects, which is different from non-transsexual men and women

**NO. 133**

**WHY THE CULTIVATION OF MINDFULNESS IS IMPORTANT IN LATE LIFE**

*Lead Author: Alexandra J. Fiocco, Dr.P.H.*
*Co-Author(s): Sasha Mallya, MA; Jennifer Boone*

**SUMMARY:**

BACKGROUND: Mindfulness-based programs have received increasing attention over the past decade. Although more rigorous studies are needed, research points to a non-specific beneficial effect of mindfulness skills training in patient populations and non-patient populations reporting high levels of distress. Recent preliminary studies suggest beneficial cognitive outcomes following mindfulness training in young adults. Given that cognitive decline increases with age, mindfulness training may prove to be beneficial for older adults. OBJECTIVE: Before implementing a mindfulness-based program in the older adult community, the current study investigated the association between trait mindfulness and cognitive function in older adults. METHOD: Fifty-four community-dwelling older adults (mean 68 years old) completed the Mindfulness Attention Awareness Scale and the Stress Profile. Participants also underwent cognitive testing that tapped into declarative memory (California Verbal Learning Task), executive function (Trails Making Tasks), verbal fluency (Controlled Oral Word Association Test) and global cognitive function (Mini-mental Status Exam). RESULTS: Although not associated with declarative memory, regression analyses showed that increased trait mindfulness was significantly associated with greater global function (r=0.57, p=0.04), increased verbal fluency (r=4.10, p=0.03), and better reaction time when set-shifting (i.e. executive function, r=-11.39, p=0.04). Correlation analyses showed that mindfulness was also associated with various scales on the Stress Profile, including reported hassles, global health, cognitive hardiness and certain lifestyle habits (ps<0.05). CONCLUSION:These findings suggest that mindfulness may be an important underlying trait associated with cognitive function in late life. A follow-up to this study will assess whether a mindfulness-based program can improve cognitive function by enhancing mindfulness skills.

**NO. 134**

**EXECUTIVE DYSFUNCTION IN TYPE2 DIABETES: THE ROLE OF HIGH BLOOD PRESSURE AND DODY MASS INDEX**

*Lead Author: Moise-Denis K. Jean, M.P.H.*
*Co-Author(s): Olusola A. Ajilore, M.D., Ph.D*

**SUMMARY:**

Objective:
To determine which clinical variables may play a role in executive dysfunction of patients with type 2 diabetes
Research Design & Methods:
This cross-sectional study uses data from a larger neuroimaging study focusing on major depression and type 2 diabetes. Clinical and psychological data was collected from 47 healthy control (HC) and 63 subjects with type 2 diabetes (T2D). To measure executive function, the following neuropsychological tests were administered: Clock Drawing, Wechsler Adult Intel-

ligence Scale 3rd edition, Matrix Reasoning and Similarities, Self-Ordered Pointing Task, Object Alternation, and Trail Making Test Part B. Tests were calculated into z-scores and analyzed by SPSS v20 through t-tests, chi-square, and MANOVA.
Results:
Compared to HC, T2D had significantly worse executive function z-scores (HC: 0.0791 ± 0.5722, T2D: -0.4639 ± 0.8349, p<0.001). No demographic difference was present other than age. Even though T2D was significantly older (59.48 ± 11.486) compared to HC (48.19 ± 12.877, p<0.001), the HC still had significantly greater executive function scores after controlling for age (p=0.001).
As expected, T2D had higher hemoglobin A1c (p<0.001). In addition, T2D had significantly higher systolic blood pressure (p=0.001), body mass index (p<0.001), HDL cholesterol (p<0.001), C-reactive protein (p=0.026), and triglycerides (p=0.041). When controlling for these differences separately, the executive function scores between groups were still significantly different, but only when controlling for both body mass index and systolic blood pressure were the scores statistically similar (p=0.059).
Conclusion:
In line with the literature, type 2 diabetes is associated with impaired executive function. This impairment is most likely related to hypertension and obesity in these patients. These results indicate that proper management of these risk factors may mitigate cognitive impairment associated with type 2 diabetes.

**NO. 135**

**CHARACTERISTICS OF ELDERLY PATIENTS WHO HAVE ATTEMPTED SUICIDES BY INTENTIONAL SELF-POISONING**

*Lead Author: Jai Young Lee, M.D.*
*Co-Author(s): Seung Young Oh, MD, Chanmin Park, MD, Geon Ho Bahn, MD, PhD, Jin Kyung Park, MD, PhD*

**SUMMARY:**
Objectives: Recently, there has been an increase in elderly patients attempting suicide by self-poisoning. This issue is a recently emerging social problem. This study investigated the clinical aspects of the elderly patients who have attempted suicides by intentional self-poisoning.
Method: We performed a retrospective analysis of 35 patients over 65 years old, who have been hospitalized in KyungHee University Hospital at Gangdong and received psychiatric consultation after suicide attempts by intentional self-poisoning from June, 2006 to May, 2013. We investigated demographic and clinical characteristics according to gender difference and also analyzed types of substance used for self-poisoning, impulsivity of suicide and types of admission.
Result: In the two different gender groups, there was a significant difference in seasonal variation and types of substance for self-poisoning. In the male group, the number of suicide attempts was highest in spring (p=0.004), while the female group showed relatively even seasonal distribution. In terms of type of substance, the male group tended to use more harmful substance than the female group (p=0.004). Many psychiatric problems co-existed in patients regardless of gender, and depression was the most common disorder.
Conclusion: In our study, male patients has a tendency to use more harmful substance than female patients when attempting suicide by self-poisoning, which would lead to a more fatal situation. Also, early psychiatric consultation would be helpful in managing depression in the early stage and thus help reduce suicide rates in elderly patients.
KEY WORDS Suicide · Poisoning · Elderly

**NO. 136**

**COMPARATIVE EFFICACY AND SAFETY OF ANTIDEPRESSANT USE AMONG ELDERLY PATIENTS: A NETWORK META-ANALYSIS**

*Lead Author: Edward J. Mills, Ph.D.*
*Co-Author(s): Kristian Thorlund, PhD, Steve Kanters, MSc, Denis Keohane MD*

**SUMMARY:**
Background: Depression is the most common mental health problem in the elderly. Depression among the elderly may be different than depression among younger populations and causative factors associated with depression may vary. There are several randomized clinical trials (RCTs) for depression within elderly populations (defined as > 65 years old), but these have not summarized for their comparative efficacy and safety.
Objective: To establish the comparative efficacy and safety of selective serotonin re-uptake inhibitors (SSRIs) and selective norepinephrine inhibitors (SNRIs) within the elderly population using network meta-analysis.
Methods: We conducted a comprehensive systematic literature review of ten key medical databases. We extracted data on partial response (50% relative improvement on Hamilton scale) and adverse events associated with falls and fractures: dizziness, vertigo, and syncope. We performed Bayesian network meta-analysis to establish the comparative efficacy and safety among available antidepressants, and calculated relative risks (RR) with 95% credible intervals (CrI).
Results: We identified 14 eligible RCTs from the literature, most of which reported on all or the majority of the considered outcomes. Citalopram, escitalopram, paroxetine, duloxetine, venlafaxine, fluoxetine, and sertraline were represented among the considered interventions. Reporting on partial response and dizziness was sufficient to conduct network meta-analysis informing comparison of all interventions. Reporting on other outcomes was sparse. In the elderly, for partial response, only paroxetine and sertraline were significantly better than placebo, yielding relative risk of 1.45 (95% CrI 1.24-1.72) and 1.28 (95% CrI 1.07-1.50). The remaining interventions yielded relative risk lower than 1.20, with citalopram and fluoxetine being the lowest as 1.07. For dizziness, none of the interventions were statistically significantly inferior to placebo. However, considerable differences were observed in the relative risk estimates. Compared with placebo sertraline had the lowest risk of dizziness (RR=1.14, 95% CrI 0.64-1.85), and fluoxetine the second lowest relative risk (RR=1.33, 95% CrI 0.87-1.30). Citalopram, escitalopram and paroxetine all had relative risks between 1.5 and 1.75, and duloxetine and venlafaxine had relative risk above 3. Data on vertigo and syncope was sparse. For syncope, only 1 event out of 360 and 129 patients were reported for sertraline and escitalopram, respectively. The corresponding number of placebo events was 0 and 1. For vertigo, 1 trial reported higher risk (7/164) with fluoxetine versus duloxetine (3/170) and placebo (3/180).
Conclusion: Sertraline and paroxetine appear to provide benefit to elderly patients in reducing depressive symptoms. Risk of

falls due to dizziness may differ according to chosen drugs. More evidence is needed on other falls related outcomes.

**NO. 137**

**TRAINING HEALTH PROFESSIONALS TO DELIVER AN INTERVENTION BASED ON PROBLEM SOLVING TECHNIQUES TO INFORMAL FAMILY CARERS OF INDIVIDUALS WITH DEMENTIA**

*Lead Author: Virginia Wesson, M.D.*
*Co-Author(s): Mary Chiu, Ph.D., Tim Pauley, M.Sc., Dunstan Pushpakumar, M.P.H., Joel Sadavoy, M.D.*

**SUMMARY:**

Background: Family carers of individuals with dementia experience high levels of stress and burden. They are a population at risk who require formal preventive and supportive interventions designed to meet their specific needs. However, the needs of family carers are often overlooked due to a lack of training for health care providers and a paucity of evidence to guide practice. Care coordinators of the Toronto Central Community Care Access Centres deliver care directly to clients and carers at home. Their visits are often focused on completing a task but it was recognized that care coordinators could leverage their visits to deliver structured interventions that foster self-care and problem solving skills among carers. Methods: Care coordinators were taught Problem Solving Technique (PST), a tested, structured intervention in which problems are examined systematically, defined explicitly and solutions found. Care coordinators used PST to assist carers in identifying and managing their unique caregiving challenges and developing other dementia management skills. The use of PST, which involves a collaborative interaction between care coordinator and carer, also to help create a stronger working therapeutic relationship. Results: The PST grounded care visits were shown to be more effective than usual home visits by care coordinators in improving carers' sense of caregiving competence and task and emotional coping and in reducing their burden and stress. Conclusions: The project demonstrated that care coordinators who received advanced training in PST were able to effectively deliver a PST intervention to carers at home thereby equipping carers to more effectively manage dementia care, decreasing their burden and enhancing their capacity to care for their family members in the community. Improving carers' skills in dementia care may reduce their reliance on primary care and psychiatric services, and prevent premature dependence on institutional services. Future Directions: The project incorporated key elements of a scalable, sustainable model readily adapted and disseminated to diverse groups of professionals, carers and persons with dementia. Next steps will include training of additional care coordinators to deliver PST with the goal of effectively and significantly expanding system capacity for dementia care and contributing to sustained financial viability of the health care system.

**NO. 138**

**INFLUENCE OF INTERNALIZED HOMOPHOBIA ON FREEDOM OF HOMOSEXUAL EXPRESSION AND PARTNERSHIP BEHAVIOR**

*Lead Author: Dragana R. Duisin, M.D., Ph.D.*
*Co-Author(s): Jasmina V. Barisic, PhD, Borjanka S. Batinic, MD, PhD, Assistant Professor*

**SUMMARY:**

Background: It is well known that internalized homophobia (IH) as an adoption of negative social attitudes toward the self has negative impact on expression of same–sex affection, relationship quality and healthy self-concept in homosexual persons. However, there are scant data on internalized homophobia and its influence on freedom of homosexual expression and partnership behaviour in Serbian homosexual males.
Method: The study was designed through voluntary and anonymous electronic interviews by placing selected testing materials on the site of the "Gay and Lesbian Info Center", over a three month period in 2013. The following instruments were applied: Semi-structured questionnaire for the assessment of sociodemographic characteristics and freedom of homosexual expression and partnership behavior, and The Internalized Homophobia Scale (Wagner, 1997).We collected reports from 119 homosexual males. Descriptive statistic and correlation analysis was conducted.
Results: Sociodemographic characteristics: Mean age: 28.7 years (SD=7.984); residence: capital (82,4%), small towns and villages (17.6%); education: high school (64.2%), secondary school (35%), elementary school (0.8%); employment status: employed (38.2%), unemployed (61.8%); living conditions: independent of primary family (40.4%), inside primary family (48.1%); Freedom of homosexual expression: "coming-out to others": indirectly indicated by data that 11,5% were gay organization members; duration of homosexual self-awareness and "coming-out to oneself": more than 10 years (59.5%), between 5-10 years (30.5%), less than 5 years (9.9%); activity in gay organizations: active (11.5%), inactive (88.5%); Relationship patterns: relationship commitment: stable relationship (38.9%), unstable relationship (61%); satisfaction with partner relationship: highly satisfied (28.2%), satisfied (35.1%), unsatisfied (36.6%); changing sexual partners: rare (58.8%), occasional (33.6%), frequent (7.6%); Internalized homophobia scale: M=41.07 (min 20, max 100, SD 16.013).
Conclusions: Correlation analysis has shown that the level of internalized homophobia significantly positively correlates with partnership dissatisfaction (p=0.001) and non-belonging to gay associations(p=0.000), but not with relationship commitments (p=0.061), changing of sexual partners (p=0.118) or duration of homosexual self-awareness and "coming-out to oneself" (p=0.900). These results indicate that a higher level of internalized homophobia in homosexual males results in decrease inpartnership satisfaction and publicly revealing oneself as homosexual ("coming-out to others").

**NO. 139**

**ADULT ATTACHMENT STYLES AND RELATIONSHIP SATISFACTION AMONG LESBIANS**

*Lead Author: Sonarzu Gullu-McPhee, Psy.D.*
*Co-Author(s): Lawrie A. Ignacio, Psy.D., Nancy Morgan, Ph.D., Micheal M. Omizo, Ph.D.*

**SUMMARY:**

Introduction: This study was designed to explore the relationship between attachment styles and relationship satisfaction among lesbians. In the last few decades, most research conducted with heterosexual samples highlighted the role of attachment styles and relationship satisfaction and quality. Individuals who were securely attached reported higher relationship satisfaction compared with individuals who had an anxious

or avoidant attachment style. Due to the paucity of research with lesbians, this study was conducted to explore the nature and direction of the relationship between attachment styles and relationship satisfaction among lesbians. The purpose was to evaluate the predictive power of attachment-related anxiety and attachment-related avoidance and to identify the variable with the strongest association to relationship satisfaction. Hypothesis: The hypothesis guiding the study was that attachment-related anxiety and attachment-related avoidance would vary in strength and direction in terms of its ability to predict relationship satisfaction among lesbians. Method: Through a snowball method of data collection, 303 lesbians from the United States, Europe and other international locations participated by responding to invitations sent via emails and postings on social networking sites, and completing an online survey that included a demographic questionnaire, the Relationship Assessment Scale (RAS; Hendrick, 1988) and the Experiences in Close Relationships-Revised instrument (ECR-R; Fraley, Waller, & Brennan, 2000). Relationship satisfaction was the dependent variable, while attachment-related anxiety and attachment-related avoidance were independent variables. Results: Multiple regression analysis was conducted to examine the hypothesized relationship. The results supported the hypothesis. There was a significant negative relationship between attachment-related anxiety and relationship satisfaction and a negative relationship between attachment-related avoidance and relationship satisfaction. Attachment-related avoidance was a stronger predictor of relationship satisfaction than attachment-related anxiety. Discussion: The results indicated that high levels of anxiety and high levels of avoidance are associated with low levels of relationship satisfaction. Previous research found that high levels of anxiety and avoidance are associated with attachment insecurity, while low levels of anxiety and avoidance are associated with attachment security. Conclusion: it is possible to conclude that securely attached lesbians are likely to report more satisfaction compared to insecurely attached lesbians. The results are consistent with previous research conducted with heterosexual married couples, which highlights similarities between heterosexual and lesbians individuals and couples.

**NO. 140**

**STILL IN UNIFORM: MENTAL HEALTH DISORDERS AMONG ACTIVE MILITARY SERVICE MEMBERS COMPARED TO VETERANS**

*Lead Author: Gwen A. Levitt, D.O.*
*Co-Author(s): Felicitas Koster, D.O., James Palmer, D.O., Jennifer Weller, Ph.D.*

**SUMMARY:**

Background: Active duty military service member (SMs) admissions to community psychiatric hospitals are increasingly common, bringing challenges and military-related requirements that are unfamiliar to civilians. Few resources are available to educate civilian providers about this unique population. Most peer-reviewed articles on military-related mental health issues involve veterans rather than SMs. Outside of the media, military, and federal agency reports, little evidence-based data exists on the prevalence of psychiatric disorders in SMs, and few efforts have been made to reconcile differences between cultures of civilian and military psychiatric care.
Methods: Investigators collected demographic and clinical variables from the medical records of 121 psychiatric inpatients, over a one and a half year period from 2012 to 2013. These patients were served in a community hospital psychiatric unit that specialized in SM treatment. These SM data were compared to publicly available statistics for Veterans Administration (VA) inpatient admissions from 1996-2001 and VA records of mental health diagnoses during 2001-2005. SMs in this study and in the VA reports all served in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF).
Results: Fifty-three percent of SMs were diagnosed with post-traumatic stress disorder (PTSD), with older SMs more frequently affected. Over 50% of SMs had three or more disorders (median = 3.5). Sixty-four percent of SMs had depressive disorders, 16% had anxiety disorders, and 70% had substance use disorders. A history of childhood abuse was reported by 35% of SMs; of those, 76% reported physical abuse and 38% reported sexual abuse. Prevalence of depression among VA admissions was estimated at 12%, substance use at 9.5%, and anxiety disorders at a rate of 6%. Among veterans, roughly 13% had PTSD, with younger patients most affected. The median number of diagnoses was three, with 27% having more than three disorders. Forty percent of the veterans endorsed childhood abuse (22% physical and 18% sexual abuse).
Conclusions: Compared to VA data, SMs in this study had a higher rate of PTSD, depression, anxiety, and substance use disorders. Older SMs were at higher risk for illness. The overall incidence of reported childhood abuse was lower among SMs, but the percentages of physical and sexual abuse were higher. Psychiatric illness was the leading cause of hospitalization for SMs. This population was clearly different from veterans, and faced unique treatment challenges such as limited access to particular medications, addiction potential of commonly prescribed medications, and side effects that may impair performance while on duty. Future research and information focusing on the needs of SMs receiving treatment in civilian psychiatric facilities is greatly needed.

**NO. 141**

**OLFACTORY IDENTIFICATION DEFICITS AND ASSOCIATED RESPONSE INHIBITION IN OBSESSIVE-COMPULSIVE DISORDER: ON THE SCENT OF THE ORBITOFRONTO–STRIATAL MODEL**

*Lead Author: Giuseppe Bersani, M.D.*
*Co-Author(s): Francesco Saverio Bersani MD, Andrea Gallo MD, Giulio Pagliuca MD, Adele Quartini MD, Flavia Ratti MD*

**SUMMARY:**

INTRODUCTION: Olfactory identification ability implicates the integrity of the orbitofrontal cortex (OFC). The fronto–striatal circuits including the OFC have been involved in the neuropathology of Obsessive Compulsive Disorder (OCD). Given the above, the aim of the present study was investigate the olfactory identification ability in OCD patients hypothesizing that OCD patients would exhibit a significantly worse olfactory identification ability compared to healthy control subjects.
METHODS: The Brief Smell Identification Test (B-SIT) and tests from the Cambridge Neuropsychological Automated Battery (CANTAB) were administered to 25 patients with OCD and to 21 healthy matched controls.
RESULTS: OCD patients showed a significant impairment in olfactory identification ability as well as widely distributed cognitive deficits in visual memory, executive functions, attention, and response inhibition. The degree of behavioural impairment

on motor impulsivity (prolonged response inhibition Stop-Signal Reaction Time) strongly correlated with the B-SIT score.
DISCUSSION: The present study is the first to indicate a shared OFC pathological neural substrate underlying olfactory identification impairment, impulsivity, and OCD. Deficits in visual memory, executive functions and attention further indicate that regions outside of the orbitofronto–striatal loop may be involved in this disorder. Such results may help to delineate the clinical complexity of OCD and support more targeted investigations and interventions. In this regard, research on the potential diagnostic utility of olfactory identification deficits in the assessment of OCD would certainly be useful.

**NO. 142**

**ASSOCIATIONS BETWEEN SUBSTANCE USE DISORDERS AND GENDER IN THE COURSE OF BODY DYSMORPHIC DISORDER**

*Lead Author: Katharine A. Phillips, M.D.*
*Co-Author(s): Megan M. Kelly, Ph.D., William Menard, B.A., Jinxin Zhang, M.S.*

**SUMMARY:**

Introduction: Lifetime rates of comorbid substance use disorders (SUDs) in body dysmorphic disorder (BDD) are high (30%-48%), particularly in men with BDD, and cross-sectional studies indicate that comorbid SUDs are associated with more severe BDD symptoms. These BDD studies also show that comorbid SUDs are associated with more impairment in health-related quality of life, including both physical and mental health-related quality of life. However, these associations have not been examined prospectively. Furthermore, no prior study has examined how history of a SUD or gender affect the subsequent course of BDD. The present study prospectively examined whether a lifetime history of SUDs and/or gender are related to change in BDD severity, physical health-related quality of life, and mental health-related quality of life over time.
Methods: 167 subjects (44 men, 123 women; 79 with a lifetime history of at least one SUD) with DSM-IV BDD at study intake were followed for up to eight years in a prospective study of the course of BDD. Generalized linear mixed modeling, controlling for age, tested whether a lifetime history of SUDs and/or gender were related to change in BDD severity (BDD-YBOCS), physical health-related quality of life (SF-36), and mental health-related quality of life (SF-36) over time.
Results: Neither a lifetime history of SUDs nor gender were associated with different trajectories of BDD severity over time. However, men had poorer physical health-related quality of life compared to women (p=.012), and their physical health-related quality of life showed greater decline over time compared to women (p=.019). Regarding mental health-related quality of life, no differences were observed between men and women over time without a lifetime history of SUDs. However, there was a significant SUDs x gender x time interaction for mental health-related quality of life (p=.038), such that women with a lifetime history of SUDs had significantly better mental health-related quality of life over time, whereas men with a lifetime history of SUDs had poorer mental health-related quality of life over time.
Conclusion: Men with BDD appear to have poorer physical health-related quality of life than women over time. Men with BDD and a history of SUDs appear to be at particular risk of poorer mental health-related quality of life during the course of BDD. These results may inform future research on the relationship between gender, substance use, and outcomes for people with BDD.

**NO. 143**

**TEMPERAMENT , CHARACTER AND PSYCHOPATHOLOGY IN PARENTS OF CHILDREN AND ADOLESCENTS WITH OBSESSIVE-COMPULSIVE DISORDER**

*Lead Author: Neslihan Sahin*
*Co-Author(s): Guliz Ozgen, Assoc. Prof. Dr., Ozden Sukran Uneri, Assoc. Prof. Dr.*

**SUMMARY:**

Introduction and objectives: OCD is a heterogenous disorder of unknown etiology.
All available family studies have observed familial aggregation of OCD, especially in
families of patients in which the disease starts during childhood and early adolescence.
Cloninger developed a dimensional psychobiological model of personality that accounts
for both normal and abnormal variation in two major components of personality,
temperament and character. It is known that the temperament and character features of
parents of children with OCD show similarities to those of adults with OCD. The aim of
the study is to identify the parental psychopathology, temperament and character
features of children and adoloescents with OCD as well as to compare these features
with matched controls.
Methods: Parents (n=60) of children and adolescents (n=30) at the age of 6-18 who
were admitted to Department of Child and Adolescent Psychiatric Outpatient Clinic of
Bakirkoy Mental Health  Hospital from June 2011 to February 2012 and diagnosed as
OCD were included to our study .
OCD is diagnosed by a semi structured clinical interview based on DSM IV criteria. 30
man and 30 woman with no psychiatric diagnosis as control group was matched with
the study group according to age, sex and socioeconomic status. SCID-I, TCI and
sociodemographical data form were administered to 60 parents of 30 children with
OCD and control group. Subjects were excluded if their children were diagnosed with
psychopathology other than OCD, mental retardation and chronic medical illness.
Informed consent was given to all case and control groups and all included in the study
who did not refuse to participate.
Results: The most frequent psychopathologies observed in parents of children and
adolescents with OCD were depression (16,6%) and adjustmen disorder (11.66%)
respectively. Administration of Temperament and Character Inventory showed that
subjects with OCD children had higher scores of harm avoid-

ance than controls
(p<0.01). Harm avoidance score was signifacantly higher in mothers of OCD children
(p<0.05). There were no difference about character features in the parents of children
with OCD and control group but parents with a psychopathology had lower scores in
self directedness.
Conclusion: The results of our study support the existence of a dimensional personality
profile in parents of children with OCD in comparison to healthy controls. Different
than the other studies about this title we found that female gender increases
psychopathology risk while one point increase in attachment score in TCI decreases this
risk. As a result this study administering semi structured clinical interview and
TCI is thought to be useful for further studies.
Studies with different methods and large sample size are needed without the limitations
of our study to investigate how parental personality profile influences the vulnerability and outcome of OCD in children and adolescents.

**NO. 144**

**REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION FOR COMORBID OBSESSIVE-COMPULSIVE-DISORDER, BODY DYSMORPHIC DISORDER AND MAJOR DEPRESSION: A CASE REPORT**

*Lead Author: Shamsah Sonawalla, M.D.*
*Co-Author(s): Salima Jiwani, M.B.B.S.*

**SUMMARY:**

Obsessive-compulsive disorder (OCD) is a chronic, disabling illness characterized by recurrent obsessive thoughts and uncontrolled repetitive acts. Body Dysmorphic Disorder (BDD) is a chronic condition in which an individual cannot stop thinking about a minor or an imagined flaw in his or her appearance. BDD and OCD often coexist, cause immense distress and are often treatment-resistant. Repetitive Transcranial Magnetic Stimulation (rTMS) has been proposed as an augmentation treatment strategy for OCD refractory to standard treatments. The authors present the case of a 40-year old male patient who presented with intractable OCD, BDD and major depressive disorder (MDD) (since the age of 12 years), who was treated with repetitive transcranial magnetic stimulation (rTMS). He met DSM-IV-TR criteria for OCD, BDD and MDD at baseline. His scores on the Yale Brown Obsessive Compulsive Scale (Y-BOCS), Yale Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS) and Beck Depression Inventory (BDI) were 28, 25 and 33 respectively at baseline. He was on antidepressant treatment (sertraline 150 mg per day), which was continued unchanged for the duration of rTMS treatment. After obtaining a written, informed consent, rTMS was administered over the left dorsolateral prefrontal cortex (DLPFC), five days a week for four weeks at 110% motor threshold, 3000 pulses at each session. At the end of four weeks, the depressive symptoms showed significant improvement and the BDI score decreased to 12. However, there was no significant change in his OCD or BDD symptoms. After a discussion with the patient, rTMS was administered 5 days a week for three weeks over the Supplementary Motor Area (SMA). Stimulus was given at 1 Hz for 10 seconds followed by 15 seconds pause and 100 trains of stimulus per session. The patient showed significant clinical improvement in his OCD symptoms at the end of three weeks with the Y-BOCS score decreasing to 18. However, his BDD symptoms persisted, with no significant change in the BDD-YBOCS scores.
He returned to the clinic six months later, seeking treatment for his persistent BDD symptoms; his OCD and MDD symptoms continued to show improvement. At this time, 15 sessions of rTMS were administered over the SMA using a similar protocol, over three weeks. At the end of three weeks, his BDD symptoms improved considerably and his BDD-YBOCS scores showed a significant change, from 25 to 14. At six months follow-up, he showed sustained improvement, with a significant improvement in quality of life.
This case study suggests that low-frequency rTMS over the SMA may be promising as an add-on treatment in refractory patients with OCD and BDD. To our knowledge, this is one of the first reported cases of rTMS treatment of comorbid OCD and BDD.

**NO. 145**

**BRAIN ACTIVATION ASSOCIATED WITH THE EFFECTS OF SYMPTOM PROVOCATION DURING MEMORY RETRIEVAL IN PATIENTS WITH OBSESSIVE-COMPULSIVE DISORDER**

*Lead Author: Jong Chul Yang, M.D.*
*Co-Author(s): Byoungjo Kim, MD, Gwang-Won Kim, PhD,*

**SUMMARY:**

Objective: Patients with obsessive-compulsive disorder (OCD) sometimes have cognitive dysfunctions that are related to the aggravation of OCD symptoms. But there are few studies about its neural mechanism. The purpose of this study is to assess the influence of symptom provocation on memory retrieval in OCD patients and to demonstrate the associated brain area. We evaluated the cerebral activation associated with the memory retrieval of unpleasant and neutral words in OCD patients and healthy controls using fMRI during word recall task.
Methods: 14 OCD patients (mean age = 29.0±12.3 years) and 14 healthy controls (mean age = 32.9±6.2 years) were participated. All OCD patients were diagnosed on the basis of DSM-IV-TR and had no other psychiatric disorders. They underwent 3.0 Tesla fMRI during word recall task. The stimulation paradigm consisted of rest condition, encoding of two-syllable words and memory retrieval of previously learned words, each lasted for 14, 18, and 18 seconds, respectively. All subjects were performed twice stimulation paradigm with unpleasant and neutral words. Six different words were presented for 3 seconds each. In the retrieval task, different and same words used in the encoding task were presented. The brain activation maps were analyzed by SPM8 program.
Results: OCD patients showed higher activities compared with healthy controls in the memory retrieval with unpleasant words over neutral (p<0.005). In the task with unpleasant words, the OCD patients showed significantly increased activities in the regions of superior, middle and inferior frontal gyri, superior and inferior temporal gyri, fusiform gyrus, superior parietal gyri, calcarine gyrus, superior and middle occipital gyri (p<0.005) compared with healthy controls.
Conclusion: There are different cerebral activations between

OCD patients and healthy controls in memory retrieval, especially with unpleasant words. These findings suggest that cognitive function of OCD patients may be significantly impaired by symptom provocation.

**NO. 146**

**20 YEAR OLD MALE WITH HELIUM-INDUCED SUICIDE ATTEMPT**

*Lead Author: Muhammad Puri, M.D., M.P.H.*
*Co-Author(s): Deepti Mughal, MD, Kalliopi-Stamatina Nissirios, MS*

**SUMMARY:**
We report a case of a 20 year old Caucasian male who was admitted in our psychiatric unit on an involuntary basis after being brought to the Emergency Department, by 911 Emergency Services, for an attempted suicide with the use of a Helium tank and mask. Patient's chief complaint is a chronic Depression since the age of 13 that has never been managed. From a review of the patient's medical records, and after interviewing the patient and his parents, a history of Depression is noted for the past seven (7) years. There are no reports of past inpatient or outpatient psychiatric treatments, apart from a previous attempt to suicide with the use of pills at the age of 16 years old for which he only received some counseling. The patient was admitted to our inpatient psychiatric unit for management, treatment and education about his depression.
The purpose of this case report is to analyze the process of assisted suicide by oxygen deprivation with Helium, and to highlight the increasing occurrence of suicidal attempts by the use of this method.

**NO. 147**

**CHANGES IN BORDERLINE PERSONALITY DISORDERED PATIENTS FOLLOWING A 15-WEEK PSYCHOEDUCATIONAL TREATMENT**

*Lead Author: Caroline Audet, Ph.D.*
*Co-Author(s): Suzane Renaud, M.D., Jacques Cloutier, M.Ps., Elizabeth Blackmore, s.w., Leandra Hallis, M.A., Jean-Sébastien Leblanc, D.Ps., Solange Marchildon, Ph.D., Amal Wahbi, M.Ps.*

**SUMMARY:**
Objectives
The aim of this research project was to assess the symptomatic and psychological changes following group psychoeducational treatment in patients with BPD. Specifically, the research aimed to document the benefits and particularities of change in BPD patients who participated in a 15 week Linehan inspired dialectic behavioral psychoeducational group program (Linehan, 1993).
Method
We recruited 30 patients referred to a university affiliated outpatient clinic for treatment of personality disorder. Patients met BPD diagnostic thru SCID-II criteria and were rated before and after the 15 week group program. Changes were measured by Symptom Checklist 90-R (Derogatis, 1994), Beck Depression Inventory-II (Beck, Brown, & Steer, 1996), Beck Anxiety Inventory (Beck & Steer, 1993), Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993), Drug Abuse Screening Test (Skinner, 1982), Barratt Impulsiveness Scale (BIS-II; Patton, Stanford, & Barratt, 1995) and Severity Indices of Personality problems (SIPP-118; Verheul et al., 2008).
Results
Results show no significant pre-post differences in the symptom questionnaires, except for a few items on BDI-II. However, SIPP-118 identified progress on three out of five domains: self control, identity integration and responsibility. Self control is defined by the capacity to tolerate, use and control one's own emotions and impulses. Interestingly, there is no significant change in impulsivity rated by BIS-II; however, patients expressed feeling improved at controlling their impulsivity. Identity integration refers to coherence of identity and ability to see oneself and one's life as stable, integrated and purposive. Responsibility is the capacity to set realistic goals and to achieve these goals in line with expectations one has generated in others.
Conclusion
According to results, a dimensional measure of BPD maladaptive core pathology with SIPP-118 appears to better document treatment changes than symptoms measures. Clinicians might need to better identify what changes are relevant and expected in treating BPD.
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**NO. 148**

**THE OCCURRENCE OF STIGMA IN PATIENTS WITH OR WITHOUT A PERSONALITY DIAGNOSIS: ARE THERE ANY DIFFERENCES?**

*Lead Author: Kirsten Catthoor, M.D.*
*Co-Author(s): Dineke Feenstra, PhD, Joost Hutsebaut, PhD, Didier Schrijvers, MD, PhD, Bernard Sabbe, MD, PhD*

**SUMMARY:**
Introduction: Stigma is defined as a discrediting and disgracing mark that usually leads to negative behavior in its bearer. Several studies have demonstrated the major burden of stigma in patients with axis 1 disorders. Stigma in axis 1 disorders is associated with social anxiety, depression, lower self-esteem, lower therapeutic adherence, and negative quality of life. Much less is known about stigma in persons with personality disorders. Given the core problems with identity issues in most people with personality disorders, it seems relevant to study its occurrence in these patients too.
Hypothesis: Treatment-seeking people suffering from PDs ex-

perience more stigma than treatment-seeking people suffering from a range of chronic axis I disorders, with stigma experiences being highest in persons suffering from Cluster B PDs.
Methods: 216 patients were consecutively admitted to the adult department of De Viersprong, a highly specialized mental health care institute in The Netherlands for patients with severe and complex personality pathology. All patients underwent a standard assessment as part of the intake procedure, including self-report questionnaires and a semi-structured interview to measure axis II personality disorders (The Structured Interview for DSM-IV Personality SIDP-IV). The Stigma Consciousness Questionnaire (SCQ)was used to measure the awareness of stereotypes of mental illness. The Perceived Devaluation-Discrimination Questionnaire (PDDQ) was used to measure perceived and actual experiences of stigma and discrimination. Independent sample t-tests were used in order to investigate differences on the mean total scores for the questionnaires measuring stigma in patients with and without a personality disorder. Multiple regression main effect analyses were conducted in order to explore the impact of the different personality disorder diagnosis on level of stigma. Age and gender were also entered in the regression models.
Results: Of the 214 patients enrolled in this study, 133 (62.1%) were female and 81 were male (37.9%). Participants were aged 19-67 years (mean age of 33.9 (SD = 10.03)). Personality disorder not otherwise specified (PDNOS) was most frequently diagnosed (38.3%), followed by avoidant personality disorder (22%), depressive personality disorder (19.6%), and borderline personality disorder (13.6%). No differences in stigma were found for patients with or without a personality disorder diagnosis. No personality disorder significantly predicted level of stigma, as measured by the SCQ. As for the results using the DDQ, only paranoid personality disorder significantly predicted higher levels of experienced stigma. The experienced level of stigma in general is not associated with severity of personality pathology, as measured by the total number of personality disorders.
Conclusion: The study didn't confirm the hypothesis of higher stigma in patients with a PD.
Discussion: Further research is warranted.

**NO. 149**

**TCI PERSONALITY DIMENSIONS IN ANTI-GLIADIN ANTIBODY POSITIVE INDIVIDUALS**

*Lead Author: Sharvari P. Shivanekar, M.D.*
*Co-Author(s): Sharvari P. Shivanekar MD , Thomas B. Cook PhD, Neha Gupta MD, Ina Giegling PhD, Annette M. Hartmann PhD, Bettina Konte PhD, Marion Friedl MD, Aamar Sleemi, MD, Dipika Vaswani MD, Farooq Mohyuddin MD, John Stiller MD, Dan Rujescu MD, Teodor T. Postolache MD*

**SUMMARY:**
BACKGROUND:
A wide range of psychiatric symptoms and disorders have been associated with celiac disease (CD) and gluten sensitivity, including anxiety disorders, mood disorders, ADHD, autism, and schizophrenia. Given the wide range of psychiatric implications associated with CD, we wanted to determine whether anti-gliadin antibody (AGA) positivity is associated with personality changes in psychiatrically healthy individuals.
METHODS:
A German version of the Temperament and Character Inventory was administered to 1000 individuals (aged 19 to 60 years), psychiatrically healthy by SCID I and II for DSM-IV. Associations between AGA seropositivity status and TCI scores were analyzed using multivariate linear models.
RESULTS:
AGA seropositivity was negatively associated with Persistence (p: 0.037) and Self Transcendence. (p=0.001).
CONCLUSION:
Limitations include the cross-sectional design and the incomplete battery of celiac disease antibodies or intestinal biopsy. Nevertheless, this is the first identification of potential associations between anti-gliadin antibodies and personality in psychiatrically healthy individuals suggesting that sensitivity to food may be associated to temperament and character traits.

**NO. 150**

**PERSONALITY DISORDERS IN PSYCHIATRIC OUTPATIENTS WITH BORDERLINE INTELLECTUAL FUNCTIONING**

*Lead Author: Jannelien Wieland, M.D., Ph.D.*
*Co-Author(s): Annemarie van de Brink, Frans G. Zitman*

**SUMMARY:**
Personality disorders in psychiatric outpatients with borderline intellectual functioning:
Comparison with outpatients from regular mental health care and outpatients with mild intellectual disabilities.
Background: The diagnosis of personality disorder (PD) in individuals with borderline intellectual functioning is clinically relevant, but there is little research on the subject. In the Netherlands, patients with borderline intellectual functioning are eligible for specialized mental health care. This offers the unique possibility to examine the rates of personality disorders in patients, who in other countries are treated in regular outpatient mental health care clinics.
Objective: Our study examines the rates of all DSM-IV-TR personality disorders and co-morbid axis I diagnoses in outpatients with borderline intellectual functioning of 2 specialized regional psychiatric outpatient departments and compares these with rates of the same disorders in outpatients from regular mental health care (RMHC) and outpatients with mild intellectual disability (ID).
Method: Our study was a cross-sectional anonymized medical chart review. All participants were patients from the Dutch regional mental health care provider Rivierduinen. Personality disorders and co-morbid axis I disorders of patients with borderline intellectual functioning (borderline intellectual functioning group; n = 298) were compared with diagnoses of patients from regular mental health care (RMHC group; n = 1085) and patients with mild ID (mild ID group; n = 210).
Results: Compared with the RMHC group, personality disorders (especially borderline PD and PD NOS) were more in the borderline intellectual functioning group. Personality disorder (especially borderline PD) was also more prevalent compared to the mild ID group. In the RMHC group mood disorders were the most prevalent co-morbid axis I disorder. In the borderline intellectual functioning as well as the mild ID groups, PTSD was the most prevalent co-morbid axis I disorder.
Conclusion: PDs often occur in psychiatric outpatients with borderline intellectual functioning, mostly together with axis I disorders. Importantly, PDs and PTSD often co-occur in this

group, signifying an interesting direction for further research.

**NO. 151**

**A RARE SYMPTOM IN POSTTRAUMATIC STRESS DISORDER: SPONTANEOUS EJACULATION**

*Lead Author: Süleyman Akarsu, M.D.*
*Co-Author(s): Taner Oznur, M.D., Bülent Karaahmetoğlu, M.D., Ali Doruk, M.D.*

**SUMMARY:**

Objective: Sexual dysfunction is reported to occur more frequently in posttraumatic stress disorder (PTSD) patients than in the general population Herein we present a patient with spontaneous ejaculation that developed when severity of PTSD symptoms increased.
Case: A 25 year old, single man admitted to psychiatric polyclinic because of PTSD symptoms, and concurrently spontaneous ejaculations. He was diagnosed PTSD after the clinical interviews. Organic pathology was not detected to explain spontaneous ejaculations. Paroxetine treatment was initiated and PTSD symptoms, frequency of spontaneous ejaculations were decreased in the clinical follow-up.
Discussion: Assessment of the presented case in the light of the literature indicates that his re-experiencing (flashbacks, nightmare) and hyperarousal (symptoms of anxiety specific to PTSD) led to an increase in adrenergic system activation and consequently spontaneous ejaculation without sexual stimulus. Paroxetine's role in decreasing the frequency of spontaneous erection and ejaculation in the presented case is thought to have occurred via control of the symptoms of PTSD and its side effects on ejaculation. Treatment based on a consideration of both PTSD symptoms and autonomic instability might increase the positive outcome rate in such patients.

**NO. 152**

**POST-TRAUMATIC STRESS DISORDER AMONG SYRIAN REFUGEES IN TURKEY**

*Lead Author: Gokay Alpak, M.D.*
*Co-Author(s): Ahmet Unal, M.D., Feridun Bulbul, M.D., Abdurrahman Altindag, M.D., Eser Sagaltici, M.D., Haluk Asuman Savas, M.D., Ph.D.*

**SUMMARY:**

Abstract
Introduction: Immigration has become an increasing problem in the world. According to the United Nations High Commissioner for Refugees (UNHCR), the number of refugees all around the world has reached to 45.2 millions at the end of 2012. Wars seem to come first among the causes of refugees to flee their country. Thousands of civilians have still been refuging to neighboring countries due to violence and life issues since March 15, 2011 which is the date accepted as the beginning of Syrian Civil War. Turkey is being on a key point for the Syrian refugees and the number of refugees in Turkey is expected to be more than 500,000 in 2013. Refugees just got out of a war are expected to experience multiple traumas therefore severe traumatic events, death, serious injuries are seen frequently in those refugees. Post-traumatic stress disorder is shown to be one of the most frequently seen psychiatric disorders among refugees who experienced war traumas.
Aim: In this study we aimed to determine the prevalence of PTSD, course of PTSD and to investigate it's relationship between various socio-demographic variables among Syrian refugees who lives in a tent city located within the boundaries of our province where our university take place.
Method: 352 Syrian refugees living in a tent city in the province of Gaziantep in Turkey, who have been selected with the method of randomization, enrolled into the study. In the light of DSM-IV-TR diagnostic criteria for PTSD; all of the refugees have undergone clinical psychiatric interview for 45-60 minutes. Sociodemographic information form and Stressful Life Events Screening Questionnaire (SLES) were applied to the participants during interviews. With the help of clinical interview and scales, participants were evaluated for PTSD for that time or along their refugee period.
Results: PTSD prevalence among Syrian refugees enrolled in the study was found to be 33.5%. Participants had a 11.6% spontaneous remission rate of PTSD throughout the duration of their refugee period. There was a positive correlation between the development of PTSD and the number of trauma refugees had been exposed and with sociodemographic characteristics like gender, previous psychiatric diagnosis and family history of psychiatric illness. There was a dose-response relation between the number of traumas and PTSD. Bivariate logistic regression analysis revealed 71% chance of getting a PTSD diagnosis with the following parameters; being female, previous psychiatric diagnosis, family history of psychiatric illness and exposure to 2 or more traumas.
Discussion: To our knowledge, our study is the first to investigate PTSD prevalence among Syrian refugees. In order to study prevalence of PTSD and related factors more accurately, there is a need for further studies held by extended number of refugees.
Keywords: Posttraumatic Stress Disorder, Refugees, Syria, War

**NO. 153**

**PREDICTORS OF MENTAL HEALTHCARE NEEDS AND BARRIERS IN WORLD TRADE CENTER RESPONDERS**

*Lead Author: Leo Cancelmo, B.A.*
*Co-Author(s): Shira N. Spiel, Carolyn J. Kushner, B.A., Leah Klein, LMSW, Clyde B. Schechter, M.D., M.A.,*
*Steven M. Southwick, M.D., Adriana Feder, M.D., Robert H. Pietrzak Ph.D., M.P.H.*

**SUMMARY:**

Background: Thousands of rescue and recovery workers involved in the aftermath of the 9/11 World Trade Center (WTC) attacks were evaluated at the WTC Health Program (WTC-HP) at Mount Sinai Medical Center and other monitoring centers. Although free-of-cost treatment programs are available, recent data suggests that the majority of WTC responders with clinically significant posttraumatic stress disorder (PTSD) symptoms are not receiving mental healthcare. It is crucial to examine the predictors of perceived need for and barriers to mental healthcare in WTC responders, as chronic and untreated PTSD has been linked to impaired functioning and reduced quality of life in this population.
Methods: Initial monitoring visits were conducted an average of 3 years after 9/11. Responders were assessed on demographic characteristics, medical/psychiatric history, WTC-related exposure severity, PTSD symptoms (PTSD Checklist-Specific Version/PCL-S), depressive symptoms (Patient Health Question-

naire/PHQ9), and functional impairment (Sheehan disability scale/SDS). Responders were asked what types of mental health services they might need (e.g., counseling, medication, stress management), and what, if any, reasons would prevent them from using such services (e.g., concerns about negative job consequences). Data was analyzed on a sample of 10,835 traditional (police) and non-traditional (e.g., construction/iron workers) responders; analyses focused on responders who did not check "I don't need counseling services" (police n = 2,449, non-traditional n = 3,496).
Results: In both responder groups, endorsement of at least one mental healthcare need was positively correlated with pre-9/11 psychiatric diagnosis; higher PCL-S, PHQ9 and SDS scores; and endorsement of at least one barrier to care. Perceived need was also correlated with non-white ethnicity and lower income in non-traditional responders. Endorsement of at least one barrier to care was positively correlated with higher PCL-S, PHQ9 and SDS scores in non-traditional responders, and non-white ethnicity in police responders. Additionally, multivariable logistic regression analyses on responders who screened positive for depression only, PTSD only, or both, (police n = 362 non-traditional n = 1,516) indicated that significant predictors of need included older age, non-white ethnicity, higher education, lower income, history of psychiatric diagnosis prior to 9/11, and co-morbid depressive and PTSD symptoms in non-traditional responders; and female gender and h/o psychiatric diagnosis prior to 9/11 in police responders. Additional results, including functional impairment as a predictor in the model, will be presented.
Conclusion: Findings identifying several predictors of increased need for and barriers to mental healthcare in WTC responders will help inform programmatic efforts aimed at screening, identifying and engaging WTC and other disaster response workers with unmet mental health treatment needs.

**NO. 154**

**PAIN CATASTROPHIZING AND PERCEIVED PREPAREDNESS PREDICT LIKELIHOOD OF RECEIVING PRESCRIPTION ANALGESIC MEDICATION IN NATIONAL GUARD TROOPS**

*Lead Author: Donald S. Ciccone, Ph.D.*
*Co-Author(s): Jagadeesh Batana, MD., Anna Kline, Ph.D.*

**SUMMARY:**

Introduction: According to the Centers for Disease Control and Prevention, prescriptions for analgesic medication have nearly tripled in the past 20 years. At issue in the present study was an effort to identify psychological factors that may lead non-drug users to seek potentially addictive analgesic medication. Specifically, we hypothesized that (a) pain catastrophizing and (b) lack of military preparedness in National Guard troops may increase the likelihood of seeking a prescription painkiller.
Methods: A cohort of 922 National Guard members completed an anonymous and voluntary health survey before and after deployment to Iraq. There was an interval of approximately 1 year between pre- and post-deployment assessment. Validated self-report instruments were used to measure military preparedness, pain intensity, pain catastrophizing and exposure to combat trauma. Results: After excluding 158 respondents who received a prescription analgesic less than 12 months before deployment, we were left with a cohort of 741 individuals who had not received a prescription painkiller. Of these, 160 (21.6%) received a prescription either during deployment or within a few months after returning home and 581 never received a prescription. The percentage of females who received a prescription was higher than the percentage of males (33.3% versus 20.5%, respectively, $p<.05$) and those seeking a prescription tended to be older (32.8 years versus 29.6 years, respectively, $p<.01$). There were no other demographic differences between those who did versus did not receive a prescription. After adjusting for sex, age, and combat exposure, pre-deployment catastrophizing (but not pain) and pre-deployment preparedness independently predicted risk of receiving a prescription analgesic during or after deployment (adjusted odds ratios of 1.08, $p<.05$ and 1.31, $p<.01$, respectively). Discussion: Psychological factors, including beliefs about pain-related threat and perceived ability to perform military duties, appear to influence subsequent likelihood of exposure to prescription analgesic medication.

**NO. 155**

**SEVERITY OF POST TRAUMATIC STRESS DISORDER AND ITS IMPACT ON EMPLOYMENT STATUS**

*Lead Author: Sarah R. Horn, B.A.*
*Co-Author(s): Kaitlin DeWilde, B.A., Adriana Feder, M.D., Brian Iacoviello, Ph.D., Dan Iosifescu, M.D., James Murrough, M.D., Jaclyn Schwartz*

**SUMMARY:**

Background: Post-traumatic stress disorder (PTSD) is an increasingly prevalent public health issue; 6.8% of American adults suffer from PTSD at some point in their lifetime (Kessler et al., 2005). PTSD, especially severe PTSD, has been associated with reduced functional status including lower ability to hold a job (Davidson et al., 1991). In a group of 104 patients recruited and evaluated for PTSD trials, we explored the presence of risk factors of PTSD and the subsequent impact on functional status (e.g., employment).
Methods: 104 adult subjects prospectively recruited between 2010 and 2013 met diagnostic criteria for PTSD by the Structured Clinical Interview Diagnostic (SCID). Severity was measured by the Clinical Assessment of PTSD Scale (CAPS; score range 0-90). Patients also completed the Childhood Trauma Questionnaire (CTQ; score range 25-125). We used linear regressions to correlate associated factors of PTSD with current PTSD severity; we used logistic regressions to correlate clinical PTSD factors with employment status.
Results: Our 104 adult PTSD subjects (age=37.5 ± 11.2 years) were predominately female (73%), ethnically diverse (37.5% Caucasian, 56.7% African-American, 7.6% biracial), and mostly unemployed (64.4% not working). Most patients (71%) reported more than one traumatic event; 38.5% endorsed sexual assault as their most severe trauma. Non-sexual assault accounted for 27.9% of primary traumas; accident or combat related accounted for 15.4% of primary trauma in addition to other traumas (16.3%) (i.e., witnessing violence). Average PTSD severity level was high (mean CAPS score =77.14, SD=14.59) ranging from 50-110. Many subjects experienced high levels of childhood trauma (mean CTQ score = 55.93, SD=20.43). Most had comorbid psychiatry diagnoses, including major depressive disorder (80%) and anxiety disorders such as social phobia, panic disorder, agoraphobia, generalized anxiety disorder and

obsessive-compulsive disorder (42.5% overall).Lastly, 36.5% had a past history of substance abuse or dependence.
Higher PTSD severity levels were associated with increased unemployment (p<.05). Military-related traumas and sexual trauma under the age of 18 were most highly correlated with current PTSD severity (p=.006). Additionally, comorbid panic disorder was positively correlated with PTSD severity (p=.02); however, the incidence of panic disorder in our sample was low (12.5%). No other significant relationships were found with co-morbidities, suggesting that comorbidity may not have a strong effect on PTSD symptom severity. Lastly, we found a trend association between a history of childhood trauma and current severity of PTSD symptoms (p=.064).
Conclusion: Our study reinforces the large public health impact of PTSD. A diagnosis of PTSD and PTSD symptom severity are associated with a significant adverse impact on employment.

**NO. 156**
**COMORBIDITY OF POSTTRAUMATIC STRESS DISORDER**
*Lead Author: Bojana Pejuskovic*
*Co-Author(s): Dusica Lecic-Tosevski, M.D., Ph.D.*

**SUMMARY:**
Introduction: Posttraumatic stress disorder (PTSD) is more frequently complicated by other psychiatric disorders than are other DSM axis I disorders. Comorbidity is the norm rather than the exception. Studies have shown that 83% of PTSD sample met criteria for at least one other psychiatric disorder, compared with 44% of those without PTSD. Objective: To asses comorbidity of PTSD in an adult general Serbian population. Methods: The sample consisted of 640 subjects chosen by random walk technique in five regions of the country. Assessment has been carried out by the MINI-5 and The Impact of Event Scale Revised (IES-R). Results: Our findings have shown that 95% of PTSD sample met criteria for at least one psychiatric disorder. Major depression was found to be one the most prevalent conditions occurring concurrently with PTSD and 64% of PTSD sample met criteria for major depressive episode. We also found significant comorbidity with other mood disorders, as well as the anxiety disorders. Conclusions: Our findings have shown a significantly high level of PTSD and comorbid psychiatric disorders. This is important both for diagnostics and treatment.

**NO. 157**
**LANGUAGE USE IN NON-TRAUMA NARRATIVES IS ASSOCIATED WITH PTSD DIAGNOSIS AND SYMPTOM SEVERITY AMONG TRAUMA-EXPOSED INDIVIDUALS**
*Lead Author: Mikael Rubin, B.A.*
*Co-Author(s): Santiago Papini, MA., Patricia Yoon, M.Phil, Neelam Prashad, Fai Tsoi, B.A.,Melissa Wittenbert, B.A., Lesia Ruglass, Ph.D., Eric Fertuck, Ph.D., Robert Melara, Ph.D., Denise Hien, Ph.D.*

**SUMMARY:**
Prior research suggests that linguistic characteristics (e.g., pronouns, anxiety, and cognitive words) of trauma narratives collected immediately after traumatic events may be strong predictors of chronic post-traumatic stress disorder (PTSD) symptom severity, even after controlling for acute PTSD symptoms. Among individuals with PTSD in exposure-based therapy, differences in the use of cognitive and death-related words in the retelling of the trauma have been linked to treatment response. However, this line of research has not gone beyond trauma narratives, so it remains unclear whether differences in language use among individuals with PTSD extend to other contexts. To address this issue, the present study used ambiguous visual prompts (i.e. Thematic Apperception Test) to elicit narratives from trauma survivors with and without PTSD. Transcribed narratives were analyzed with the Linguistic Inquiry and Word Count program (Pennebaker, 2007). Analyses revealed significant linguistic differences between the PTSD and trauma-exposed groups. Individuals with PTSD used more third-person singular pronouns and death related words, and fewer third-person plural pronouns, relative to trauma-exposed controls. Within the PTSD group, severity of re-experiencing symptoms was associated with greater use of sad words and singular pronouns, and lower use of words that are suggestive of cognitive flexibility; severity of avoidance symptoms was associated with fewer death related words; and severity of hyperarousal symptoms was associated with lower use of anxiety and anger related words. A multivariate regression model indicated that these linguistic variables accounted for 55% of the variance in total symptom severity among the PTSD group, even after controlling for age, education, and depression. These findings are consistent with previous research suggesting that language use is a strong predictor of PTSD psychopathology, and extend the evidence to include the linguistic characteristics of non-trauma related narratives.

**NO. 158**
**PERCEPTION OF LIFE EVENTS FROM PATIENTS DISCHARGED FROM COMMUNITY MENTAL HEALTH SERVICES: A LONGITUDINAL ANALYSIS**
*Lead Author: Thomas L McLean, M.S.*
*Co-Author(s): Phillip D. Harvey, PhD, Raymond J. Kotwicki, MD, MPH*

**SUMMARY:**
Background. A significant, challenging aspect of measuring the efficacy of mental health programs involves longitudinal analysis of patient well-being after discharge from services. In addition to assessing whether patients maintain clinical and functional improvements experienced during treatment, it is also important to directly assess patient perception of life events after discharge.
Methods. One-hundred twenty seven patients having moderate to severe mental illness reported perceptions of life events, using a modified 50-item scale (LEQ; Norbeck, 1984). This scale was given multiple times after they were discharged from services from a private mental health facility emphasizing a self-recovery model. Time since discharge was measured in days since discharge, and all patients had times since discharge ranging from 3 days post discharge to 730 days since discharge. Factor analytic methods were used to verify the validity of life event categories. Longitudinal analyses were done on repeated measures of the LEQ to assess how perceptions of life events changed over time.
Results. Factor analytic methods reduced the number of life event categories into three primary groups: an institutional life events factor, personal well-being factor, and an interpersonal factor. Repeated measures analysis demonstrated that overall,

clients reported greater positive perceptions of life events over time, with the exception of the institutional life events factor. In addition, discharge status and length of stay both moderated this relationship.
Implications. Patients, particularly those who completed treatment and had longer lengths of stay, reported increasing positive perceptions of life events over time since discharge, with the exception of life events related to institutional organizations (work, school, and crime/legal). This finding is consistent with research showing long-term benefits of mental health care emphasizing a self-recovery model. Further research should examine both the internal (personal clinical status, functioning status) and external (continued care with other mental health entities) factors that may be related to how patient perceptions of life events change over time after discharge from a mental health program.

**NO. 159**

**EFFECTS OF A COMMUNITY NAVIGATION SERVICE ON RECOVERY MEASURES AND DEVELOPING "A MEANINGFUL DAY" AMONG PERSONS WITH SERIOUS MENTAL ILLNESSES**

*Lead Author: Kelly Smith, B.A., M.A.*
*Co-Author(s): Beth Broussard, M.P.H., C.H.E.S, Michael T. Compton, M.D., M.P.H.*

**SUMMARY:**
Objective: For many individuals with serious mental illnesses, recovery remains unattainable due to a cycle of repeated hospitalizations and insufficient community support. Opening Doors to Recovery (ODR) was designed in southeast Georgia to reduce hospitalization and support recovery through a team of three Community Navigation Specialists (CNSs; a licensed clinician, a peer specialist, and a family member of a person with a serious mental illness). While some aspects of the recovery model have received substantial attention, less consideration has been given to the concept of meaningful everyday activities. Along with other recovery measures, the emphasis on the concept of "a meaningful day" in the ODR program was examined.
Methods: 100 participants with a serious mental illness and a history of inpatient psychiatric hospitalizations were enrolled to receive community navigation services from a team of three CNSs. In this mixed-methods study, the meaningful day construct was measured using two quantitative items indicating how meaningful an average day was during the past month and how many days in the past month were meaningful. Additionally, a number of other recovery measures were quantitatively examined. Using repeated-measures linear mixed models, trajectories of scores on recovery measures from baseline to follow-up time-points (4-, 8-, and 12-months) were examined. Corresponding individual qualitative interviews were conducted with 30 randomly selected participants consisting of clients, family members, CNSs, and program leaders to identify themes pertaining to the meaningful day element of recovery.
Results: Significant linear trends were observed for all but one of 14 measures among 72 participants included in this analysis, and trajectories of improvement were evident across the follow-up period. The extent of participants' involvement with the CNSs, classified as heavily involved or less involved, was associated with changes in all four primary recovery measures (e.g., the mean change in quality of life was –6.5±27.3 among participants less involved with their CNSs, compared to +12.3±33.4 among those heavily involved; p=.01). From baseline (hospital discharge) to 4-, 8-, and 12-month follow-up while working with the CNSs, statistically significant linear trends were observed for both meaningful day measures. Analysis of qualitative data uncovered themes pertaining to companionship, productivity, and autonomy as correlates of "a meaningful day" for ODR participants.
Conclusions: These initial effects suggest that the ODR model could prove to be a successful, new service approach for promoting recovery in community mental health systems. The concept of "a meaningful day" may be useful for future endeavors that aim to promote recovery in ways that are locally significant. A randomized, controlled trial of Opening Doors to Recovery is needed to more clearly demonstrate the effects of the intervention on diverse recovery measures.

**NO. 160**

**A STUDY OF A COMMUNITY NAVIGATION SERVICE ON REDUCING RECIDIVISM AMONG PERSONS WITH SERIOUS MENTAL ILLNESSES**

*Lead Author: Kelly Smith, B.A., M.A.*
*Co-Author(s): Beth Broussard, M.P.H., C.H.E.S., Michael T. Compton, M.D., M.P.H.*

**SUMMARY:**
Objective: The ability for individuals with serious mental illnesses to pursue recovery is often compromised by repeated hospitalizations and arrests/incarcerations. New models for community mental health systems are needed to address recidivism, as well as service fragmentation, a lack of local stakeholder involvement, and a lack of communication between police and mental health agencies. Opening Doors to Recovery (ODR) was designed to address these issues, aiming to prevent institutional recidivism and promote recovery.
Methods: 100 participants with a serious mental illness and a history of inpatient psychiatric hospitalizations were enrolled in ODR to receive community navigation services. Two state agencies provided administrative data on the number of hospitalizations, number of days hospitalized, and number of arrests in the year before and after enrolling in the program. With participants serving as their own historical controls, differences in recidivism prior to and during enrollment were examined by modeling counts with repeated-measures Poisson regression.
Results: Among 72 participants included in the analysis, the number of hospitalizations decreased (1.9±1.6 to .6±.9, p<.0005), as did the number of days hospitalized (27.6±36.4 to 14.9±41.3, p<.0005), though the number of arrests did not. Though not significant, felony arrests decreased numerically. The extent of the participants' involvement in the service, which was classified as heavily involved or less involved, was associated with the number of days re-hospitalized (9.0±23.4 and 35.5±74.1, p=.02), suggesting a dose-response effect of the ODR intervention on re-hospitalization.
Conclusions: Individuals with serious mental illnesses often do not have the necessary resources or support in the community to pursue recovery, and as a result, they often struggle with repeated hospitalizations and incarcerations. Findings suggest feasibility and potential benefits of the ODR model in reducing hospital recidivism in this population. Without a control group, it is difficult to fully attribute positive findings to the ODR program, as some observed effects might be attributed

to other factors or regression to the mean. Examining whether the intensity of community navigation service involvement was a predictor of positive response was an attempt to address this issue, and it clearly was a predictor for the number of days hospitalized. While the results were promising, more extensive research through a randomized, controlled trial is needed to assess the effectiveness of ODR. Community mental health systems are in need of new, innovative approaches to target recidivism. This community navigation model might represent one such approach.

**NO. 161**

**MEDICALLY UNEXPLAINED ILLNESSES AND SOMATOFORM CONDITIONS IN CHILDREN AND ADOLESCENTS: A QUALITATIVE EXPLORATION OF PARENTS' PERSPECTIVES**

*Lead Author: Roo T.M. Deinstadt, M.A.*
*Co-Author(s): Ayaz K. Kurji, BScH, MD Candidate 2014, Sarosh Khalid-Khan, MD, DABPN*

**SUMMARY:**

Introduction: Medically unexplained illnesses and somatoform conditions in children and adolescents can be physically debilitating and emotionally distressing for both patients and their families. These presentations are typically multi-symptomatic and associated with lengthy medical investigations involving numerous visits to various health care providers. Little is known about how parents of affected children and adolescents experience the multi-faceted treatment process. Given that successful family involvement is an integral component of effective treatment, an understanding of parents' experiences in regards to their child's condition is paramount. We sought to explore the lived experiences of parents of children and adolescents with medically unexplained illnesses or somatoform conditions, particularly in relation to their interactions with health care providers.

Methods: Purposive sampling was used to select parents of children and adolescents with medically unexplained or somatoform conditions who had attended a psychiatric outpatient clinic in Ontario, Canada. Semi-structured interviews were conducted with five participants (including one parent couple); one of the conditions was resolved and three were ongoing. The interviews were transcribed verbatim and an interpretative phenomenological analysis was employed to extract themes from the data.

Results: Main themes included personal distress and family conflict, both exacerbated by the condition and related stress. Parents also described positive and negative changes in relationships, as well as changes in their family's lifestyle and daily functioning. Parents had various understandings of the mind-body connection in relation to their child's condition, and many viewed psychiatry's involvement as an adjunct. The majority of parents had limited contact with a primary care provider and all parents expressed frustration with the lack of continuity of care. As a result, parents adopted advocacy and leadership roles in managing their child's care and sought structure in the search for a diagnosis.

Discussion: Findings suggest that the multiple stressors associated with these conditions interact to propagate cycles of stress for parents. A holistic approach to treatment is recommended, involving attunement to the family system and cycle of stress, psychoeducation for families and limited referrals and tests for somatoform conditions. Furthermore, these findings highlight the importance of communication and collaboration amongst providers and within parent-provider relationships, and the central managerial role of primary care providers.

**NO. 162**

**GENDER DIFFERENCES IN TREATMENT-SEEKING PATIENTS WITH CANNABIS DEPENDENCE WITHOUT POLYSUBSTANCE ABUSE OR SEVERE MENTAL ILLNESS**

*Lead Author: Alain Dervaux, M.D., Ph.D.*
*Co-Author(s): Marie-Chantal Bourdel, Marie-Odile Krebs, M.D, Ph.D., Xavier Laqueille, M.D.*

**SUMMARY:**

Introduction: The epidemiological NESARC study in general population found gender differences in the clinical characteristics and psychiatric comorbidities among individuals with cannabis use disorders. However, in the NESARC study, many subjects presented polysubstance abuse or severe mental illness, from a non-treatment-seeking sample. The objective of the present study was to examine gender differences in treatment-seeking patients with cannabis dependence without polysubstance abuse or severe mental illness.

Methods: All consecutively male (n=130) and female (n=43) outpatients seeking treatment for cannabis dependence (DSM-IV criteria) in the substance abuse department of Sainte-Anne Hospital in Paris, between June 2007 and June 2013, were included in the study. Patients with psychotic disorders, bipolar 1 disorders, current opioid or cocaine dependence were excluded. The patients were assessed using the Diagnostic Interview for Genetic Studies (DIGS 3.0/DSM-IV diagnoses), and the Global Assessment of Functioning (GAF) scale. Withdrawal symptoms and subjective effects to cannabis were collected using a specific 26-item questionnaire.

Results: No significant difference between the group of male patients and the group of female patients was found for mean age (mean age=27.9 years, SD=8.8 vs 28.0, SD=9.6 respectively, ANOVA, F=0.001, p=0.98), marital status (p=0.39), educational level (p=0.88), and average number of cannabis cigarettes per day (n=7.1, SD=5.2, vs n=7.1, SD=4.2 respectively, p=0.99). There were higher rates of histories of depressive disorders in the group of female patients, compared to the group of male patients (61.8% vs 23.1% respectively, p=0.0001), higher rates of histories of social phobia (29.0% vs 12.4% respectively, p=0.02), higher rates of histories of generalized anxiety disorder (43.8% vs 24.3% respectively, p=0.03), higher rates of previous suicide attempts (36.6% vs 11.3 respectively, p=0.0001), higher rates of familial histories of depression (70.3% vs 39.5% respectively, p=0.001), higher rates of previous anxiolytic treatments (71.4% vs 44.4% respectively, p=0.001), or antidepressant treatments (63.4% vs 29.4% respectively, p=0.001), and lower rates of subjective effects of disinhibition (37.7% vs 19.0% respectively, p=0.03) and intensification of ordinary sensory experiences (36.9% vs 19.0% respectively, p=0.03) while using cannabis.

The GAF scores were higher in the group of male patients, compared to the group of female patients (p=0.04). No significant difference between the two groups was found for withdrawal symptoms.

Discussion/Conclusions: The frequency of depressive disorders and anxiety disorders in treatment-seeking patients with

cannabis dependence was high, particularly in female patients. These disorders need to be systematically screened in cannabis use disorders. The treatment of depressive and anxiety disorders needs to be taken into account in the treatment of cannabis dependence.

**NO. 163**

**THE CORRELATION BETWEEN TRAUMA, PTSD, SUBSTANCE ABUSE AND DRUG OF CHOICE IN A COMMUNITY SAMPLE SEEKING OUTPATIENT TREATMENT FOR ADDICTIONS**

*Lead Author: Susan J. Finch, M.D.*
*Co-Author(s): Cynthia A. Di Prospero, B.A., Emily R. Hawken, Ph.D.*

**SUMMARY:**
Introduction: Previous studies have shown high rates of Post-traumatic Stress Disorder (PTSD) and past traumatic experiences among patients with substance use disorders (SUD). However, there is little Canadian data and scant evidence related to severity of trauma, PTSD and SUD. Clinically, higher rates of trauma and PTSD appear to be more associated with certain substances of abuse, but study results vary. The purpose of this study was to assess the correlation between severity of trauma history, current PTSD symptoms, current SUD and drug of choice in a population seeking outpatient addiction treatment.
Methods: 51 participants (23 males, 28 females) with a history of drug or alcohol addiction were recruited from a street based harm reduction clinic and an addiction counseling service in Kingston, Ontario. Participants were between 25 and 66 years of age (M=45.02, SD=11.44) and were only excluded from the study if they had delusions, delirium or dementia. Information on demographics and drug of choice was collected from the participant and they were administered a self report questionnaire of four surveys: The Addiction Severity Index Self Report (ASI), The PTSD Checklist – Civilian (PCL-C), The Stressful Life Experiences Screen (SLES) and the Traumatic Antecedents Questionnaire (TAQ).
Results: Participants had high rates of exposure to trauma (M=7.60, SD=3.57 lifetime traumatic events on SLES) and co-morbid PTSD (58%). ASI scores demonstrated positive correlation to PCL-C scores r(49)= 0.522, p< .001, suggesting a link between addiction severity and PTSD symptomatology. Not surprisingly past trauma and PTSD symptoms demonstrated a correlation, as PCL-C scores were positively related with TAQ scores r(49)= 0.350, p= .012, and both with the number of traumas reported on the SLES r(49)= 0.415, p= .002, and the reported levels of stress linked to the traumas on the SLES r(49)= 0.386, p= .005. Interestingly, no significant correlations between ASI scores and TAQ or SLES scores were found. This could be due to the fact that trauma may be linked to addiction severity at the peak of addiction. Furthermore, analysis did not show an association between drug of choice and trauma history or PTSD measures.
Conclusions: There are high rates of trauma exposure and PTSD in people seeking outpatient treatment for SUD. There seems to be a link between severity of trauma, PTSD and SUD but not a clear relationship with drug of choice. Limitations of this study include small sample size and possible under reporting of current substance use. Future studies will expand to more clinics in the Kingston area and include behavioral addictions.

**NO. 164**

**SOCIODEMOGRAPHIC AND PSYCHOPATHOLOGIC PREDICTORS OF THREE-YEAR INCIDENCE OF DSM-IV ALCOHOL AND DRUG USE DISORDERS IN U.S. MEN AND WOMEN**

*Lead Author: Rise B Goldstein, M.P.H., Ph.D.*
*Co-Author(s): Deborah A. Dawson, Ph.D., Sharon M. Smith, Ph.D., Bridget F. Grant, Ph.D., Ph.D.*

**SUMMARY:**
Background. Alcohol (AUDs) and drug use disorders (DUDs) are significantly more prevalent in men than women and rates of comorbid psychopathology are high in both sexes. Prevalences of disorders comorbid with AUDs and DUDs differ by sex in ways similar to the total population, whereas adjusted comorbid associations, measured by odds ratios (ORs), of lifetime DSM-IV AUDs and DUDs with other lifetime DSM-IV disorders vary little by sex. Sex-specific data on predictors of incident AUDs and DUDs are rare. This study examined predictors of three-year incidence of DSM-IV AUDs and DUDs among men and women in a nationally representative U.S. sample.
Methods. Data were derived from Waves 1 and 2 of the National Epidemiologic Survey on Alcohol and Related Conditions. Mean interval between Wave 1 and Wave 2 interviews was 36.6 months. Diagnoses were generated using the Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV Version. Because individuals with prior dependence can develop abuse without dependence on specific substances, and vice versa, hierarchical relationships between alcohol and drug abuse and dependence were suspended for this study.
Results. There were highly significant sex differences (all ps < 0.001) in three-year incidence rates (%): 8.39 and 3.12 for alcohol abuse in men and women, respectively; 4.62 and 2.18 for alcohol dependence; 2.24 and 1.22 for any drug abuse; and 1.16 and 0.58 for any drug dependence. Age < 65 years (ORs=3.15-44.19) and previously or never married status at Wave 1 (ORs=1.49-3.15) were the most consistent sociodemographic predictors of incidence in both sexes; after adjustment for sociodemographic characteristics and additional Wave 1 lifetime psychiatric comorbidity, borderline (ORs=1.89-7.94) and narcissistic (ORs=1.55-3.64) personality disorders (PDs) were the most consistent psychopathologic predictors. In both sexes, reciprocal temporal relationships (ORs=1.98-3.53) were observed between alcohol abuse and alcohol dependence; nicotine dependence predicted both AUDs and drug abuse (ORs=1.39-2.26). A broad range of other Wave 1 lifetime disorders predicted incident AUDs and DUDs in disorder- or sex-specific ways (ORs=0.15-7.05).
Conclusions. Age, marital status, and borderline and narcissistic PDs may inform secondary prevention, treatment, and clinical follow-up protocols for both sexes whereas mood, anxiety, and other personality disorders may carry sex-specific implications. Similarity of clinical profiles between DSM-IV dependence and DSM-5 moderate to severe AUD, and concordance between DSM-IV dependence and DSM-5 alcohol, opioid, cannabis, and cocaine use disorders suggest that predictors of moderate to severe DSM-5 AUDs and DUDs may resemble those of alcohol and drug dependence in this study. More cautious inferences from abuse to mild AUDs and DUDs may be warranted given divergence of clinical profiles between alcohol abuse and mild AUDs.

**NO. 165**

**NOVEL COMBINATION TREATMENT FOR PSYCHOSTIMULANT ABUSE: PROOF-OF-CONCEPT PHASE IIA TRIAL**

*Lead Author: Tong H. Lee, M.D., Ph.D.*
*Co-Author(s): Wayne F. Beyer, Ph.D., Bruce K. Burnett, Ph.D., Shih-Ting Chiu, Ph.D., Shein-Chung Chow, Ph.D., J. Corey Fowler, Ph.D., Brett Froeliger, Ph.D., David Gorelick, M.D., Ph.D., O. Barry Mangum, Pharm. D., Robert Noveck, M.D., Ph.D., Ashwin Patkar, M.D., Steven T. Szabo, M.D., Ph.D.*

**SUMMARY:**
Psychostimulant abuse exerts profound socioeconomic, legal and medical problems as a primary psychiatric disorder and a significant comorbid factor for other psychiatric and medical disorders. To date, various drug monotherapies have been evaluated for the efficacy in treating psychostimulant abuse; however, most have proven unsuccessful, and no medication is currently approved by the Food and Drug Administration (FDA) for this indication. In the present proof-of-concept Phase IIa trial (ClinicalTrials.gov identifier #: NCT01290276), we determined the safety/tolerability/efficacy of a combination of immediate-release formation of methylphenidate (MPh-IR) and a novel delayed-release formation of the antiemetic ondansetron (Ond-PR2: FDA IND # 110195). The design, manufacturing and Phase I testing of this formulation was supported by the National Institute on Drug Abuse. The study was a single-site, randomized, double-blind, placebo-controlled clinical trial. The main goal was to determine outcome of a 2-week treatment with either 20 mg MPh-IR + 8 mg Ond-PR2 ([MPh-IR + Ond-PR2]) or identical-appearing placebo (dextrose) in abstinent psychostimulant abusers. Scores on selected behavioral rating scales and deficits under fMRI cue-reactivity and inhibitory control paradigms were used to compare the two treatment groups before and after a two week treatment. All subjects were recruited from a local residential treatment program (TROSA), and all study procedures were conducted according to a protocol approved by the Duke University Health System Institutional Review Board. All participating subjects reviewed and signed the Informed Consent Form. A total of 48 TROSA residents meeting the DSM-IV criteria for "primary substance abuse" (DSM-IV) were screened and 30 qualifying subjects were randomized into either [MPh-IR + Ond-PR2] or placebo treatment group. Twenty eight subjects completed the 2-week drug treatment and pre- and post-treatment fMRI assessments. No significant differences were observed between [MPh-IR + Ond-PR2] and placebo groups in the number of subjects experiencing adverse events. No serious adverse events were observed or reported. In contrast to safety/tolerability, [MPh-IR + Ond-PR2] treatment significantly reduced or tended to reduce selected behavioral rating scores and fMRI measurements compared to placebo treatment. In summary, [MPh-IR + Ond-PR2] treatment was safe and well-tolerated by abstinent psychostimulant abusers, and the results to date indicate that this treatment might provide for an effective option for psychostimulant abuse treatment.

**NO. 166**

**PREGABALIN ABUSE AMONG INTRAVENOUS DRUG USERS**

*Lead Author: Solja Niemela, M.D., Ph.D.*

**SUMMARY:**
Introduction: Pregabalin is an anticonvulsant drug commonly prescribed for neuropathic pain and generalized anxiety disorder. Recently, case reports concerning pregabalin abuse case have been published, but features of pregabalin abuse have not been studied.
Methods: Participants were i.v.-users attending a needle exchange program in Turku, Finland. Information about pregabalin abuse during past 12 months was collected anonymously using a questionnaire in 2008 (n=112, 68% male), and in 2011 (n=107, 71% male).
Results: Self-reported pregabalin abuse was common among i.v.-users. In 2008, 28% of the responders reported pregabalin abuse (2% daily, 6% weekly, 12% monthly, and 10% more seldom) In 2011, 65% of the responders reported pregablin abuse (10% daily, 15% weekly, 23% monthly, and 17% more seldom). In 2011, all pregabalin abusers reporter using pregabalin orally, but also snorting (22%), and i.v.-use (13%) were reported. Of abusers, 80% reported using pregabalin as a booster drug. Most commonly pregablin was abused with buprenorphine (73%) and benzodiazepines (58%). Reported motives for pregabalin abuse were anxiolytic (69%), euphoric (59%), and sedative (22%) effects of pregabalin.
Conclusions: Pregablin abuse is common and has taken root among i.v.-users in south-western Finland. Pregabalin is often used as a booster drug in combination with opioids and benzodiazepines. When prescribing prebalin, the abuse potential should be taken into account, especially for i.v.-users using opioids and benzodiazepines.

**NO. 167**

**N-ACETYLCYSTEINE AS TREATMENT FOR TOBACCO USE DISORDERS: CLINICAL TRIAL**

*Lead Author: Eduardo S.T. Prado, M.D.*
*Co-Author(s): Sandra Odebrecht Vargas Nunes, M.D., Ph.D., Marcela Baracat, Ph.D., Décio Sabattini Barbosa, Ph.D., Luiz Gustavo Piccoli, M.D., Bruna Aguiar, M.S., Olivia Dean, Ph.D., Seetal Dodd, PhD, Michael Berk, M.D., Ph.D.*

**SUMMARY:**
Background: The nutritional supplement N-acetylcysteine (NAC) is a cystine prodrug that restores glutamate homeostasis and appears to be a potential new treatment for tobacco use disorders, by reducing craving and reward behaviors. NAC has also a role as an antioxidant, promoting the synthesis of Glutathione (GSH). The present study aims to investigate the efficacy of NAC as a treatment for tobacco use disorder.
Method: Participants were refractory smokers recruited from outpatients at the Centre of Approach and Treatment for Smokers at Londrina State University, Brazil. A 12-week double-blind, randomized, placebo-controlled trial, was conducted to compare efficacy of NAC 3g/day (N=16) versus placebo (N=16). The primary outcome was smoking cessation, informed by self-report, and confirmed by exhaled Carbon Monoxide (CO exh) measure. Monthly, participants received medical evaluation and behavioral group therapy cessation counseling, provided ratings of withdrawal symptoms, adverse effects, and carbon monoxide (CO) measurements, and logged daily cigarette smoked.
Results: Current tobacco users did not differed at baseline with respect to marital status, age, years of education, gender and

for smoking behavior variables including onset of tobacco use, years of smoking, Fagerström Test for Nicotine Dependence (FTND) score, cigarettes consumed per day, lifetime cigarette consumption, depressive disorders, and alcohol consumption for NAC or placebo. There was no difference between NAC and placebo group on smoking cessation outcome. However, NAC group participants at the end of the study, presented a greater reduction on CO exh measures (p=0,003) and on daily cigarettes (p<0,001) compared to placebo. Also, there was no difference on self-reported withdrawal symptoms and adverse effects on both groups.
Conclusions: The present study suggests that the use of NAC as treatment for tobacco use disorders has reduced CO exh levels and decreased the number cigarettes daily compared to placebo. Notwithstanding the limitations the trial carries with a limited number of participants, this data could serve as a hypothesis-generating stimulus for further clinical trials to clarify the role of NAC in the treatment of tobacco use disorder, and in the reduction of oxidative stress associated with this condition.

**NO. 168**

**CERBERA ODALLAM: AN INFORMATION AGE METHOD OF SUICIDE IN THE WESTERN WORLD**

*Lead Author: Connie L. Barko, M.D.*
*Co-Author(s): Alyssa A. Soumoff, M.D.*

**SUMMARY:**

INTRODUCTION: With the dawn of the Internet, patients have access to innovative materials and methods to harm themselves. In this case report, the patient ordered a plant from the Internet that is native to South Asia and India. Cerbera odallam, also known as the “suicide plant,” is a recognized cardioglycoside with activity similar to digoxin. She ingested the seeds of Cerbera odallam with the intent to kill herself.
CASE DESCRIPTION: The patient is a fifty-one year old female residing with her parents, with a significant history of childhood trauma, dissociative episodes involving self-harm, prior suicide attempts, and poor coping skills in the context of increasing social stressors. While allegedly searching the internet to find a tree to practice bonsai trimming, she found Cerbera odallam, or commonly known as “the suicide plant.” She ordered seeds of the plant and ingested them. Forty-eight hours after consumption, she was bed-ridden secondary to general malaise, ataxia, and gastrointestinal distress. The patient voluntarily presented to the emergency room, but did not reveal her toxic ingestion to providers. She was found to have significant central nervous system depression. Electrocardiogram revealed T-wave inversions and ST depression in leads V3 through V6. When she did not significantly improve with routine treatment in the intensive care unit, her medical team was confounded and contacted the Psychiatric Consult Liaison Service. The patient acknowledged to the psychiatrist details of the toxic ingestion. She was treated with digoxin immune FAB and medically stabilized before being admitted to inpatient psychiatric care.
DISCUSSION: Suicide is a leading cause of death, taking the lives of one million worldwide annually (World Health Organization, 2011). Well-planned, drastic, or violent attempts seem to indicate a higher risk of a subsequent successful attempt. Few studies have been performed that examine how the “Information Age” in the second half of the twentieth century has influenced the prevalence or demographic of suicide attempters. This case report is an example of how the internet can impact access to innovative materials and methods for individuals to harm themselves. Due to the ease with which information can be accessed and goods can be purchased, medicine has had to adapt to keep abreast of potential ingestants that patients can access by using the Internet. Psychiatrists have a particularly challenging role, because they possess the ethical and legal obligation to assess for safety and manage risk.
CONCLUSION: Psychiatrists must continually evolve with the “Information Age” in order to evaluate and manage suicide risk in their patients. Future study could focus on suicide risk assessment and mitigation among individuals who search the internet for suicide-related purposes.

**NO. 169**

**IS CHOICE OF SUICIDE METHOD IN PATIENTS WITH PERSONALITY DISORDERS ASSOCIATED WITH OTHER COMORBIDITY?**

*Lead Author: Charlotte Björkenstam, Ph.D.*
*Co-Author(s): Emma Björkenstam PhD, Lisa Ekselius Prof, Bengt Gerdin Prof*

**SUMMARY:**

Introduction: Suicide is the most ultimate and unwanted outcome of a psychiatric disorder. In general, a number of factors decide the method used to commit suicide. Only few studies have, however, examined the influence of the type of psychopathology on the choice of suicide method. We therefore examined the influence of type of personality disorder (PD), care related variables, and the presence and type of psychiatric and somatic comorbidity, on different suicide methods in patients hospitalized with a main diagnosis of PD.
Methods: Data came from two Swedish population-based registers, the National Patient Register and the Cause of Death Register. All individuals aged 15-64 hospitalized with a primary diagnosis of PD between 1987 and 2012 (n=24 275) were identified and followed with respect to suicide until December 31, 2012, generating 1 349 deaths. PD was clustered according to DSM IV into clusters A, B and C, and “other”, including PD not otherwise specified (NOS). Standardized mortality ratios (SMR) with 95 percent confidence intervals (CI) and suicide method were calculated for each PD cluster by sex, and were also related to the presence of comorbidity.
Results: Of 14 385 women and 9 890 men, 653 women (4.5 %) and 696 men (7.0 %) had committed suicide. The dominating method was poisoning, followed by hanging and drowning. The overall suicide SMR (S-SMR) was 30.4 (28.2-32.8) for women and 15.8 (14.7-17.0) for men. In women, cluster B and “other” PD had the highest, and similar S-SMRs; 33.2 (29.6-37.1) and 35.2 (31.5-39.3), while cluster C had the lowest, 1.9 (1.2-3.0). In men “other” had the highest S-SMR; 34.6 (31.4-38.1), about twice that for cluster B 16.7 (14.6-19.2). Cluster A had mean S-SMRs of 18.2 and 14.0 respectively, and cluster C had marginally affected S-SMRs. In women hanging, cutting, jumping and poisoning had the highest S-SMRs, followed by drowning, with similar values in cluster B and “other”. These methods also had the highest S-SMRs in men. Here, however “other” PD had twice as big S-SMR as cluster B for the methods poisoning and hanging, about 1.5 as big S-SMR for cutting and similar S-SMR for jumping. A majority of patients with PD had both psychiatric and somatic comorbidity during follow-up; 79 % in women and

69 % in men. The presence of psychiatric comorbidity resulted in a further increased S-SMR. An increased S-SMR was, however, also seen in those without any psychiatric comorbidity; 20.5 (16.4-25.6) and men; 8.8 (7.1-10.9). Somatic comorbidity did not affect overall S-SMR; 29.7 (27.4-32.2) for women and 15.5 (14.3-16.8) for men.
Discussion and conclusion: The increased risk for suicide in patients with PD is unevenly distributed with respect to method and type of PD. It was not related to somatic comorbidity and only in part related to psychiatric comorbidity. Any attempt from society to decrease the suicide rate in persons with PD must take these characteristics into account.

**NO. 170**

**PREDICTORS OF SUICIDAL IDEATION DURING THE POSTPARTUM PERIOD: A LONGITUDINAL PROSPECTIVE COHORT STUDY**

*Lead Author: Jessica L. Coker, M.D.*
*Co-Author(s): Shanti P. Tripathi, Cynthia A. Fontanella, Ph.D., D. Jeffrey Newport M.D., MS, Zachary N. Stowe, M.D.*

**SUMMARY:**
Importance: Up to three percent of all completed suicides in reproductive age women occur during the first year postpartum. The overall incidence of suicidal behaviors – ideation, attempts, and completion during the peripartum remain obscure. Characterizing the predictors of suicidal behaviors following childbirth serves to enhance screening procedures.
Objectives: To 1) determine the prevalence of suicidal ideation (SI) in postpartum women with neuropsychiatric illness using commonly used depression rating scales, 2) compare individual scale item scores and characteristics of women who screen positive SI, and 3) examine predictors of suicidal ideation on clinician versus patient rated scales based on sociodemographic, obstetrical and neonatal history, and psychiatric history.
Design: Prospective observational study
Setting: Academic women's mental health clinic
Participants: Women participating in a longitudinal observational study of mental illness in pregnancy and postpartum period.
Main Outcomes and Measures: Suicidal ideation was assessed using the Edinburgh Postnatal Depression Scale (EPDS) item 10, Beck Depression Inventory (BDI) item 9, and/or the Hamilton Rating Scale for Depression (HRSD) item 3. By design, any non-negative score on these items was coded as positive. The characteristics of screen-positive women were evaluated including Structured Clinical Interview for DSM-IV (SCID) diagnosis, SCID current mood module, planning of pregnancy, pregnancy complications, delivery complications and breastfeeding to compare women who were more likely to screen positive on a patient rated scales versus clinician rated scale. Other potential predictors of positive suicidal ideation screen were evaluated including current treatment, pregnancy outcome, history of childhood trauma and scores on the Pittsburgh sleep scale, Dyadic Adjustment Scale and Postpartum Support Scale.
Results: Eight hundred forty-two women had completed life time SCID as well as the BDI, HRSD or EPDS during the first 3 months postpartum. SI was identified in 199 (23.6%). Among those screening positive for SI, 132 (16.1%) were positive on the BDI, 129 (22.3%) on the EPDS and 85 (11.5%) on the HRSD. When comparing patient rated scales (BDI and EPDS) to clinician rated scale (HRSD), 13.8% had positive screens on the patient rated scales only and 2.4% on the clinician rated scale only. Alternatively, women who had current depressed mood per SCID mood module were more likely to endorse SI on the clinician rated scale compared to the patient rated scales.
Conclusions : Postpartum women under current treatment for neuropsychiatric illness continue to have high rates of suicidal ideation with sensitivity differing between patient and clinician rated depression scales. Further studies are warranted to understand the association between predictors and the presence of SI in postpartum women.

**NO. 171**

**CHRONOBIOLOGICAL TSH AND PROLACTIN RESPONSES TOTRH: RELATIONSHIP TO SUICIDAL BEHAVIOR IN DEPRESSED PATIENTS**

*Lead Author: Fabrice Duval, M.D.*
*Co-Author(s): Marie-Claude Mokrani, Ph.D., Alexis Erb, M.D, Felix Gonzalez Lopera, M.D, Xenia Proudnikova, M.D., Hassen Rabia, M.D., Claudia Alexa, M.D.*

**SUMMARY:**
Background: A substantial body of evidence suggests that thyrotropin-releasing hormone (TRH) acts as a homeostatic modulator in the central nervous system. In depressed patients, TRH hypersecretion may be seen as a compensatory mechanism in order to normalize serotonergic (5-HT) activity. We have hypothesized that a decrease in 5-HT function triggers an increased TRH secretion that secondarily normalizes 5-HT neurotransmission. Furthermore, we have also recently suggested that this compensatory mechanism is not effective in depressed patients with a history of suicidal behavior (1), which could play a role in the sustained 5-HT hypoactivity consistently linked to suicidal behavior.
Methods: We studied the thyrotropin (TSH ) and prolactin (PRL ) responses to 8 AM and 11 PM TRH stimulation tests, carried out on the same day, in 122 euthyroid DSM-5 major depressed inpatients with suicidal behavior disorder (SBD) (current [n=71], in early remission [n=51]); and 50 healthy hospitalized controls.
Results: Baseline TSH and PRL measurements did not differ across the 3 groups. In SBDs in early remission, TSH and PRL responses (expressed as the maximum increment above baseline value after TRH [Δ]) were indistinguishable from controls. Compared to controls and SBDs in early remission, current SBDs showed lower 11 PM-ΔTSH (both $p< 0.02$), lower ΔΔTSH values (differences between 11PM-ΔTSH and 8AM-ΔTSH) (both $p<0.000001$), and lower baseline free thyroxine (FT4) levels (both $p<0.00001$). In current SBDs, ΔΔPRL values (differences between 11PM-ΔPRL and 8AM-ΔPRL) were lower than in controls ($p<0.006$) and were negatively correlated with lethality ($r= -0.45$; $n=71$; $p<0.0001$). Among current SBDs, violent suicidal attempters (n=15) showed lower TRH responses than non-violent attempters (n=56) (8 AM-ΔTSH, $p< 0.006$; 11 PM-ΔTSH, $p<0.00002$; ΔΔTSH, $p<0.03$; ΔΔPRL, $p<0.04$).
Conclusions: Our results suggest that central TRH secretion is not altered in depressed patients with SBDs in early remission. The findings that current SBDs exhibit reductions in both TRH-induced TSH and PRL evening responses, associated with decreased FT4 levels, support the hypothesis that hypothalamic TRH drive is reduced (2)-leading to an impaired TSH and PRL resynthesis in the pituitary during the day after the morning TRH challenge. In violent suicide attempters, the marked

abnormalities of TRH test responses might indicate a greatest reduction in central TRH drive. We suggest that a decreased hypothalamic TRH activity may play key role in the pathogenesis of suicidal behavior.
References:
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2- Alkemade A, Unmehopa UA, Brouwer JP, et al. Decreased thyrotropin-releasing hormone gene expression in the hypothalamic paraventricular nucleus of patients with major depression. Mol. Psychiatry 2003;8:838-839.

**NO. 172**
**WHEN THE SUICIDAL BEHAVIOR HAPPENS IN THE ADJUSTMENT DISORDER**
*Lead Author: Sarper Ercan*
*Co-Author(s): Abdullah Bolu, M.D., Süleyman Akarsu, M.D.*

**SUMMARY:**
Objective: Suicidal behavior was shown to be quite high in patients with a diagnosis of adjustment disorder in the studies which were performed previously in our clinic. In this study, information will be given about suicidal behavior and adaptation process of patients with adjustment disorder who did suicidal behavior.
Method: The medical records of 98 patients who had been admitted to psychiatric clinic of Gülhane Military Medical Academy, Ankara, Turkey and diagnosed with Adjustment Disorder according to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM IV) were examined respectively. The data about sociodemographic characteristics, characteristics of suicidal behavior, suicide risk in adjustment disorder subtypes were obtained. Patients who attempted suicide were divided into two groups as using the suicide method which had high possibility for rescue and low possibility for rescue.
Results: Patients diagnosed with adjustment disorder had suicidal attempts in the 5.7±2.8 month of the change in the environment. Patients using the suicide method which had high possibility for rescue had a higher level of education. Cluster B personality features were in the forefront in this group of patients. Patients using the suicide method which had high possibility for rescue were in the 2-6. month of change in the environment and patients using the suicide method which had low possibility for rescue were in the 5.5-9.5. month of change in the environment. Patients with adjustment disorder with depressed mood subtype commonly used the suicide method which had low possibility for rescue and patients with adjustment disorder with anxiety subtype commonly used the suicide method which had high possibility for rescue.
Discussion: The most remarkable finding in this study was 6th-9th month of the adjustment process is a critical period for suicidal behavior.

**NO. 173**
**IS THE FREQUENCY OF BINGE DRINKING RELATED TO A HIGHER RISK OF SUICIDAL BEHAVIOR? AN ASSESSMENT BY UTILIZING THE C-SSRS IN ADULT PSYCHIATRIC INPATIENTS**
*Lead Author: Ahmad Hameed, M.D.*
*Co-Author(s): Alan J Gelenberg, M.D., Roger E Meyer, M.D., Michael A Mitchell, M.A., Amanda M White, Eric A Youngstrom, PhD.*

**SUMMARY:**
Introduction: Alcohol use is a significant and well-established risk factor for completed suicide. Binge drinking has also been linked to suicide attempts in non-clinical samples. In response to concerns about methodological limitations of suicide instruments, the development and the use of standardized instruments to assess for suicidal risk has become crucial in clinical settings.
Method: Data were collected and analyzed as part of an original study comparing suicide assessment instruments in adult psychiatric inpatients (n = 199; 43.2% male, 56.8% female). Lifetime and past month suicidal behavior were evaluated using the Columbia Suicide Severity Rating Scale (C-SSRS). A Risk Assessment Measure (RAM) collected information about alcohol use and abuse. Alcohol users reported how many times per month they binge drank.
Analysis: A secondary analysis was performed to determine if a relationship existed between suicidal behavior and alcohol use/abuse in an adult psychiatric inpatient sample. Chi-square tests tested for differences in suicidal behavior between users and non-users and, among users, between those who binge drank and those who did not. Gender differences were also examined. Point biserial correlations calculated the magnitude of possible relationships between suicidal behavior and binge frequency.
Results: Males and females did not differ in their suicidal behavior. 54% of patients used alcohol. Suicidal behavior did not differ between those who used and those who did not. 65.1% of males and 45.1% of females were users; gender and user status did not have an interaction effect on suicidal behavior. 50% of drinkers binge drank at least once a month. Males and females were equally likely to binge. Suicidal behavior did not differ between those who binged and those who did not; gender and binge status did not have an interaction effect. Moderate positive correlations revealed that males who had a lifetime and past month history of interrupted suicide attempt tended to binge drink more frequently. Among females, a small positive correlation emerged between past month aborted suicide attempt and binge frequency.
Discussion: Alcohol users and bingers were not more likely to engage in suicidal behavior and no gender effects emerged. However, suicidal behavior was associated with more frequent binge drinking among both male and female adult psychiatric inpatients. Though being a binge drinker was not related to suicidal behavior as previous studies have shown, frequency of binge drinking was related to suicidal behavior. To the best of our knowledge, linking C-SSRS outcomes to frequency of binge drinking in an adult psychiatric inpatient population is novel. The corelational results suggest that adult psychiatric inpatients who binge drink frequently may be at a higher risk for suicidal behavior. It is imperative that physicians place additional emphasis on patients' frequency of binge drinking when assessing the risk for suicide.

**NO. 174**
**TELEHEALTH MONITORING IN SUICIDAL VETERANS WITH SCHIZOPHRENIA**
*Lead Author: John Kasckow, M.D., Ph.D.*
*Co-Author(s): A Rotondi, B Hanusa, L Fox, S Zickmund, M Chin-*

*man, S Gao, G Haas*

**SUMMARY:**

Suicide is a serious public health problem among Veterans with schizophrenia. Risk for suicidal behavior is elevated among these Veterans following discharge from the hospital for an admission for suicidal behavior. Many Veterans with schizophrenia have difficulty monitoring their symptoms and adhering to treatment. To address this, we designed a home-based telehealth system using the Health Buddy monitoring device for Veterans with schizophrenia who were recently hospitalized for suicidality. We recruited Veterans hospitalized for recent suicide attempts or suicidal ideation, who met DSM-IV criteria or schizophrenia/schizoaffective disorder with a score of at least 1 on item 4 or 5 of the Beck Scale for Suicidal Ideation (BSS). At discharge, participants were randomly assigned to VA Usual Care or VA Usual Care + Health Buddy monitoring. Those in the Health Buddy group logged in daily to the device. At baseline and 2, 4, 8 & 12 week follow up, assessments included the Scale for Suicidal Ideation (SSI) and Calgary Depression Scale (CDRS).

We screened 1185 unique veterans between 2/2012 and 8/2013 from the inpatient unit of the VA Pittsburgh Health Care System. Of these, 112 had a diagnosis of schizophrenia/schizoaffective disorder and were hospitalized for a recent suicide attempt or escalating suicidal ideation; 31 met criteria for study enrollment and signed informed consent; 6 withdrew before randomization. Of the 25 randomized participants, 15 were randomized to the telehealth group and 10 were randomized to the control group. The average age was 52.5; 17/25 (68%) were African American (vs white) and 21/25 (84%) had at least a high school education. Baseline SSI scores were 10.4 +/- 1.2 and baseline CDRS scores were 12.6 +/- 0.8. There were no significant group differences in baseline scores or demographics.

Thirteen (87%) of the telehealth and 7 (70%) of the Usual Care group completed at least one follow up interview. In the telehealth group, 2 dropped out soon after baseline and 2 had only 1 follow up visit. In the Usual Care group, 3 dropped out after baseline, and 1 missed only the 3 month follow up. Daily adherence in telehealth system use was 85% (range 57-100%) in each of the 3 months of follow up. Analyses of SSI and CDRS scores were completed with mixed effect regression. SSI scores were right skewed and thus log transformed. For participants who were adherent to telehealth reporting there was a time by treatment effect with chi square (df=4) = 9.5, p=.05; HB participants had lower scores at 3 months. For CDRS scores neither the main effect for treatment nor interaction of time and treatment was significant. The use of the telehealth monitoring system in the 3 months following hospital discharge appears to be feasible and effective at maintaining low levels of suicide behaviors.

The views do not reflect the views of the US government or that of the US Department of Veterans Affairs.

**NO. 175**

**CRITICALITY AND RISK FACTORS OF REPEATED SUICIDE ATTEMPTS**

*Lead Author: Seongho Min, M.D., Ph.D.*

*Co-Author(s): Yongsung Cha, M.D., Sejin Jang, Ph.D., Yoonha Jang, R.N., Min-Hyuk Kim, M.D., Hyunjin Nho, M.A.*

**SUMMARY:**

Objectives: The suicide is one of the most serious public health problems which are major 10 reasons of human death around the world and its worldwide trend is increasing. Especially those who attempted suicide have reached the risk of dying by the suicide 10 times more than that of the general population, it has reported that 1 person out of 5 persons retries suicide within 4 years. In this study, we tried to identify risk factors of repeated suicide compared to demographic, clinical and psychological factors of those who attempted suicide repeatedly or simply.

Methods: This study was done targeting 765 persons who attempted suicide visiting to emergency medical centers in Yeongseo districts in Gangwon between March, 2009 to June, 2012. According to past medical history of suicide attempts, these people were classified into a group of repeated suicide attempt in the case of attempting suicide more than two times, and another group of simple suicide attempt in the case of attempting first suicide. As a statistical analysis, multiple logistic regression analysis was performed to analyze risk factors of repeated suicide.

Results: Those who attempted repeated suicide and those who attempted simple suicide of 765 persons who attempted suicide were 30%(N=230) and 70%(N-532), respectively. In rating scale of the risk structure, a group of repeated suicide attempt has a high suicide risk and a low degree of structure so criticality on the overall behavior of suicide was significantly higher than that of the group of simple suicide attempt($p<0.001$). Repeatedly suicide's risk degree was 1.017 times(95%CI: 1.008-1.027) as they are growing younger, in the case of attempting suicide in violent ways, its risk degree was 1.752 times (95%CI: 1.140-2.692). In psychiatric aspects, repeated suicide risk of those with no past psychiatric therapy was 1.625 times(95%CI: 1.179-2.314) and that of those with the past psychiatric therapy was 2.666 times(95%CI: 1.539-4.619). However, religion(presence of religion OR:0.948, 95%CI: 0.680-1.321) and family history of suicide(presence of a family history of suicide OR: 0.948, 95%CI: 0.680-1.321) were not detected as significant factors.

Conclusion: Repeated suicide attempts are closely related to suicides' psychiatric problems and family history, violent suicide attempts, the presence of drinking at the time of suicide so thorough evaluation and positive attention and observation for these factors are requested in terms of therapeutic approach or prevention.

**NO. 176**

**RECOMMENDATIONS FOR SUICIDE PREVENTION TRAINING FOR PRIMARY CARE PHYSICIANS IN METRO AND URBAN COMMUNITIES IN INDIA: FINDINGS FROM THE INDO-CANADIAN**

*Lead Author: Amresh K. Shrivastava, M.D.*

*Co-Author(s): Ravi Shah. MD, Shubhangi Parkar, .MD.Ph.D., Rahel Eynan,.Ph.D., TSS Rao.MD, Kranti Kadam.MD,Chetali Dhuri. MD, K Kishor.MD, LaKshaman Dutt.MD, Paul Links.FRCP(C)*

**SUMMARY:**

Introduction: Suicide is a major public health problem which is becoming increasingly difficult to prevent in India considering the newly emerging risk factors and vulnerable groups e.g., stu-

dents, women, farmers. One of the organizational barriers to suicide prevention is the shortage of human resource and the lack of adequate training in specialized assessment techniques and treatment approaches amongst primary care physicians. This paper presents some of the recommendations for suicide-specific training which are based on the needs assessment research we conducted with primary care physicians in Mumbai, Mysore, and Ahmedabad.
Methods: Data was collected using a combination of qualitative and quantitative strategies such as environmental scans, focus groups, and gap analysis. Participants for this study were recruited from healthcare professionals in primary care and community settings.
Results: A total of 144 primary care health professionals (physicians = 26%; primary care workers = 74%) completed the needs assessment questionnaire. The majority of healthcare professionals (64%) received no formal training in suicide prevention during their degree program, nor did they acquire it later. 63% of the participants do not ask about suicidal ideation. Their level of confidence and competence for identification and intervention was only moderate and agreed with requirements of more education. Primary care physicians are positioned to lead important public health interventions to prevent suicide because their practice setting provides opportunities for early identification and intervention for common mental health disorders, suicidality, as well as for counselling and guidance, and care coordination. However, the ability to provide appropriate care depends on the primary physician's knowledge, comfort, and skills.
Conclusion: These findings support and justify the arguments for the development of a robust curriculum for formal training and for continuing medical education designed with specific focus on suicide prevention, to help empower primary care physicians to identify suicidal behaviour in the primary care setting.

**NO. 177**

**A NEW SCALE TO ASSESS SUICIDALITY: SCALE FOR IMPACT OF SUICIDALITY-MANAGEMENT, ASSESSMENT AND PLANNING OF CARE (SIS-MAP-SCN)-BRIEF INTERVIEW SCREENER**

*Lead Author: Amresh K. Shrivastava, M.D.*
*Co-Author(s): Amresh Shrivastava, MD MRCPsych FRCPC, Miky Kaushal MD, Megan Johnston, Ph.D, Robbie Campbell FRCPC, Charles Nelson Ph.D.*

**SUMMARY:**

Background
Suicide risk presents a challenging issue in clinical psychiatry, for a number of reasons but primarily that of patient safety. Generally suicide risk is assessed clinically, and structured assessments are required in order to provide clearer direction for decision-making. Structured assessments optimize utility across inpatient care, emergency rooms, and crisis centers.
A number of scales are available for clinical and research work. The concept of risk is continuously evolving. Measures with accurate and valid information should be based upon multifactorial risk-constituent domains, e.g. biological, social, psychological, environmental and demographic factors. In this study we examine risk level of suicidality amongst psychiatric patients and cross match with their level of care using the brief version of a validated new scale: SISMAP (Scale for Impact of Suicidality - Management, Assessment and Planning of Care (SIS-MAP-scn) - Brief Interview Screener). The objective of this study is to examine validity of the brief version of the scale and to determine the most common risk factors for outpatients and hospitalized patients.
Method:
We collected information from patients' clinical assessment as part of an ongoing study of examining re-hospitalization. Psychopathology of these patients was assessed using HDRS for depression, BPRS for psychosis, in addition to clinical and demographic data.
Suicidality was assessed by SIS-MAP-scn. Data was analyzed using SPSS. Pearson correlations and one-way analyses of variance were used to explore potential differences in variables of interest based on SIS-MAP-scn scores.
Results
We assessed 35 patients.
SIS-MAP risk index scores ranged from 1 to 15 (M = 6.8, SD = 3.60)
Suicide risk did not differ by gender ($F(1, 33) = 0.25$, $p = .62$) or age ($r = .004$, $p = .98$). Suicide risk was significantly positively correlated with HDRS scores ($r = .62$, $p < .001$) and with BPRS scores ($r = .41$, $p = .014$).
Suicide risk was also associated with a longer duration of illness ($r = .33$, $p = .05$), number of hospitalizations ($r = .31$, $p = .07$) and alcoholism ($r = .29$, $p = .09$). Suicide risk was also significantly higher among those admitted for a suicide attempt than those admitted for other reasons ($F(4,30) = 4.24$, $p = .008$).
Conclusion: the study supports that the SIS-MAP-brief screener scale is a valid adjunct for risk assessment. Patients with severe psychopathology and those admitted with an attempt carry high risk for suicide.

**NO. 178**

**CONFIRMATION OF RELIGIOSITY AS A PROTECTIVE FACTOR AGAINST SUICIDALITY WITHIN A PSYCHIATRIC INPATIENT SAMPLE BY USING C-SSRS**

*Lead Author: Amanda White, B.S.*
*Co-Author(s): Alan J. Gelenberg, M.D., Ahmad Hameed, M.D., Roger E. Meyer, M.D., Michael A. Mitchell, M.A., Eric A. Youngstrom, Ph.D*

**SUMMARY:**

Introduction: Religious involvement is associated with fewer negative mental health outcomes including suicidality. Suicidal behavior is more common among those who do not consider themselves as religious and do not have moral objections to suicide. However, few studies have examined suicidal ideation and have used a standardized suicide assessment instrument such as the Columbia Suicide Severity Rating Scale (C-SSRS) to study the effect of religion on suicidality.
Method: Data were collected and analyzed as part of an original study comparing suicide assessment instruments in adult psychiatric inpatients (n = 199). The C-SSRS assessed suicidal ideation and behavior in patients' lifetime and past month. Three questions about religiosity from a Risk Assessment Measure (RAM) inquired about belief in God, attendance of religious services, and moral objections to suicide.
Analysis: To examine whether religiosity was related to outcomes on a standardized suicide assessment instrument, a secondary analysis was performed using chi-square tests. φ was calculated to determine the magnitude of possible rela-

tionships.
Results: A majority of patients believed in God (86.9%, n = 172) and believed suicide is immoral (62.4%, n = 123). A minority of patients regularly attended religious services (38.7%, n = 77). Suicidal ideation was not less prevalent among those who believed in God and who had moral objections to suicide. However, those who regularly attended religious services were less likely to indicate a past month history of passive ($\varphi = -0.16$; $p < 0.05$) and active non-specific suicidal ideation ($\varphi = -0.14$; $p < 0.05$). Patients who believed in God and who had moral objections to suicide were less likely to have lifetime and past month history of suicide attempt; φs ranged from - 0.17 to - 0.23; $p < 0.05$. They were also less likely to have lifetime history of suicidal behavior ($\varphi = -0.15$, $\varphi = -0.21$; $p < 0.05$). Past month history of suicidal behavior was less common among those who believe in God ($\varphi = -0.15$; $p < 0.05$) and those who regularly attend religious services ($\varphi = -0.17$; $p < 0.05$). This relationship trended for those who had moral objections to suicide but just missed significance.
Discussion: Adult psychiatric inpatients who attended religious services exhibited less suicidal ideation. Those who believed in God, attended religious services, and had moral objections to suicide exhibited less suicidal behavior. To the best of our knowledge, this study was unique in employing a standardized suicide assessment to examine religiosity as a protective factor for suicidality among adult psychiatric inpatients. This study adds to the findings on religiosity and suicidal behavior observed in non-clinical samples and contributes to the limited literature on religiosity and suicidal ideation. When assessing for suicidal risk, clinicians should consider their patients' belief in God, attendance of religious services, and moral objections to suicide.

**NO. 179**
**CITY UNDER SIEGE: LESSONS LEARNED AT SCHOOL FROM THE BOSTON MARATHON BOMBINGS**
*Lead Author: Deepika Shaligram, M.D.*
*Co-Author(s): Nancy Rappaport M.D.*

**SUMMARY:**
Background: Youth are increasingly victims of disaster either directly or indirectly and schools have often become the setting in which the aftermath of a disaster plays out. The tragedy of the 2013 Boston marathon bombings, followed by the lockdown of neighboring cities while the suspects were hunted down had repercussions on students and staff at local schools. Psychiatry Residency training programs in the area were called on to provide support to the victims.
Objectives:
To illustrate the psychological sequelae of traumatic stress due to disaster in vulnerable youth and adults and to review treatment options that integrate community-based and emergency medical resources for coordinated care.
Methods:
A qualitative approach using narratives and real life vignettes will be used to illustrate special challenges faced by youth and their caregivers (parents, staff serving at local schools).
An outline of best practices for caregivers and mental health providers responding to crisis will be discussed in a framework of pre-disaster, acute phase and post acute phase interventions.
Results and Conclusions:
Though it may be impossible to completely protect youth from disaster, mental health professionals can treat and perhaps prevent psychological distress in its aftermath. Given the ubiquitous nature of disaster, it is imperative for psychiatry residency programs to offer training in Disaster psychiatry.

**NO. 180**
**LONG-TERM MENTAL HEALTH PROBLEMS OF TORTURE SURVIVORS AND THEIR FAMILIES IN KOREA**
*Lead Author: Changho Sohn, M.D., Ph.D.*
*Co-Author(s): Hwayoung Lee, M.D., Ph.D., Chedo Lim, M.A., Jihyoun Yu, M.A.*

**SUMMARY:**
Objectives: Research has shown that torture may cause lifelong psychiatric problems. The present study aimed at examining the mental health problems of people who have been falsely accused of espionage and who were tortured into false confessions, as well as their families in Korea. This study was conducted as a part of project funded by the Seoul Metropolitan Government to support the healing process for victims of human rights violations.
Method: Participants include 46 torture survivors (43 males and 3 females, mean ages:66.3) who had experienced torture during the period of 1970 through the 1980's and 24 of their family members. Mental health problems were investigated by Impact Event Scale-Revised (IES-R), the Center for Epidemiological Studies Depression Scales (CES-D), and the Post-traumatic Cognitions Inventory (PTCI). We also assessed past history of alcohol abuse measured by Alcoholism Screening Test of Seoul National Mental Hospital (NAST) and self-mutilating behavior, including suicide attempts.
Results: The victims in this study were tortured for 4 to 110 days and served 2 to 17 years in prison. 87.5% of the victims and 83.3% of their family members reported ongoing symptoms compatible with PTSD by IES-R(cut-off score:24). 45.5% of survivors and 28.6% of family members showed very severe depressive symptoms that might indicate the presence of depressive disorder by CES-D standards (cut-off score:25). 21.7% of survivors had problems with alcohol to such a degree that need psychiatric treatments. 4.3% of survivors had suicidal thoughts during the past 6 months and 21.7% of them had attempted suicide during their post-victim period. The degree of cognitive distortion measured by PTCI was significantly correlated with severity of PTSD (IES-R) and depression (CES-D) symptoms ($p<0.01$).
Conclusion: This study has shown that torture survivors and their families were suffering long-term psychiatric difficulties including PTSD, depressive disorder, and problems with alcohol. The negative and dysfunctional post-traumatic cognition might have an important role in etiology and maintenance of PTSD and depression. Appropriate psychiatric treatments including cognitive intervention are necessary to improve the mental health problems in torture survivors.

**NEW RESEARCH POSTER SESSION 08**
**NEW RESEARCH POSTER SESSION 2**

**NO. 1**
**SPORT PSYCHOLOGY FOR PSYCHIATRISTS: FROM INITIAL**

**TRAINING TO BOARD CERTIFICATION**

*Lead Author: Roland A. Carlstedt, Ph.D.*

**SUMMARY:**

The American Board of Sport Psychology (ABSP) has seen a significant increase in inquiries from psychiatrists and other physicians pertaining to continuing education, training and board certification opportunities, including integrating sport psychology into medical school rotations and post-doctoral fellowships in sport psychology. In response to heightened interest within the medical community we are implementing an information and outreach initiative that was designed to expose the field of medicine and especially psychiatrists, along with interested physicians, medical school educators, medical students and post-docs to the broad field of sport psychology (ranging from athlete assessment and mental training for performance enhancement purposes, to biomarker-based research of mind-body processes that underlie and impact peak psychological and technical performance, and to clinical sport psychology that includes but is not limited to concussion assessment/management, substance-abuse/doping and exercise psychotherapy/psychology). In this presentation we provide an overview of evidence-based assessment and mental training procedures including a comprehensive field-tested and validated ecological protocol that was designed to monitor psychophysiological responses in real-time during official competition. Central to this protocol are accountability metrics for determining the reliability of initial assessments at intake and efficacy of prescribed mental training procedures. This protocol is ideally suited to physicians since they have experience with technological, instrumentation and biomarker approaches to diagnosis and intervention/outcome testing. In addition to performance-related procedures and methodologies, perspectives, issues and methods in clinical sport psychology are presented along with professional issues pertaining to the integration of sport psychology into medical practices, marketing sport and clinical sport psychology, referrals, collaboration, research, ethics and critical issues in sport/clinical sport psychology/psychiatry. We also introduce continuing education, training and fellowship opportunities and our board certification road-map to the medical field. We also present models for incorporating sport psychology into medical school continuing education programs, medical school rotations, fellowships/visiting fellowships and grand rounds. The ultimate goal of this presentation is to expand sport psychology into the medical realm by fostering integrative education, training and collaborative programs that will benefit practitioners and patients/clients.

**NO. 2**

**AN UNDERGRADUATE INTERPROFESSIONAL EDUCATION PROGRAM IN MENTAL HEALTH: EXPERIENCES FROM AN INTERDISCIPLINARY PERSPECTIVE**

*Lead Author: Kien T. Dang, M.D.*
*Co-Author(s): Shelley Brook, MD, Dean Lising, BScBio, BscPT, Mary E. Newbold, PT, MSc, BScPT*

**SUMMARY:**

Introduction: Much has been written about the positive effects interprofessional collaborative teams have in patient care, and the shift towards team based health care delivery. However, health professional education has lagged behind in training interprofessional collaboration. As a result, there has been renewed focus on Interprofessional Education in order to prepare health care trainees to be able to provide care in team settings. In 2010, the World Health Organization, published a framework for action on Interprofessional Education and Collaborative Practice, and in 2011, the Interprofessional Education Collaborative, sponsored in part by the AAMC, published core interprofessional competencies. Despite this renewed focus, there are only a few reports in the literature describing interprofessional education programs involving psychiatry.

Methods: At St Michael's Hospital, in cooperation with the office of interprofessional education, we organized and implemented a 5 week clinically based interprofessional education program, aimed at students in medicine, nursing, pharmacy and social work. This comprised of a 5 week small group case based seminar series, individual clinical mentorship, and a final collaborative presentation by the students. Key elements for interprofessional education were adhered to.

Results: 7 students participated in the mental health interprofessional education program. There were no significant differences in the results of the interdisciplinary perception scale pre vs post seminar series. Qualitative evaluations demonstrated students reporting deeper knowledge of other professions, understanding of their roles, and increased awareness of working with professionals from other professions. Students also highlighted the importance of the informal small group environment and the benefit of a clinical placement, and the importance to the future holistic care of patients. All students had positive experiences.

Discussion: Given the number of participants, it is expected that no significant difference is present in the results of the interdisciplinary perception scale. As well, selection bias may contribute to students who at baseline place value in interprofessional collaboration. However, students gained knowledge of other professions and their roles and all felt this education program was beneficial. More student evaluations will be important in demonstrating further impact but these evaluations are very encouraging for the implementation of our clinical interprofessional education program.

**NO. 3**

**PSYCHIATRY RESIDENT QUALITY OF LIFE: MULTICULTURAL QUALITY OF LIFE INVENTORY FROM TRI-STATE SURVEY**

*Lead Author: Jessica G Kovach, M.D.*
*Co-Author(s): Christopher Combs, PhD., Harvinder Singh, MD., William R Dubin, MD.*

**SUMMARY:**

Background

Well-being during residency is associated with fewer inappropriate exchanges with patients, less interpersonal conflict, greater patience and collegiality, improved efficiency and decision making, and greater dedication to career (1). Studies examining quality of life and general well-being among psychiatry residents are lacking.

Methods

We emailed a 10-minute on-line survey to psychiatry residents in ACGME-accredited programs in Pennsylvania, New Jersey and Delaware. The survey was open during May and June of 2013. We inquired about hours of time spent in various aspects of training, value assigned to aspects of training,

residents' involvement in their own personal psychotherapy, and overall resident wellness using the Multicultural Quality of Life Index (MQLI). Multivariate Analysis of Variance was used to compare wellness of psychiatry residents by year of training as well as by to compare residents in personal psychotherapy with those not in therapy.

Results

Response rate was 132 of 328 (40%) with slight predominance of females (52%), age group 30-34 yr (42%), white race (60%) with equal distribution among all four years of residency. Only 26% (35) of respondents were involved in personal psychotherapy. Most important reason for attending psychotherapy was self awareness and understanding (40%) and most common reasons for not attending were time and finances. PGY 4 residents scored significantly higher on total MQLI score as well as overall satisfaction with residency program. For age group, there were significant differences for Residency satisfaction, MQLI total score, and sub-scores Self-Care, Interpersonal Fulfillment & Global Perception of Quality of Life. No significant difference was found for sex or personal psychotherapy status.

Discussion

Our study reports importance of resident age and year of training as significant predictors of resident well-being. Although personal psychotherapy can help residents address stress, burn out, fatigue, and, when present, their own psychiatric illness, we did not find a significant association with MQLI score.

While the MQLI has been validated in health care workers (2), this is the first time it has been administered during a study to psychiatry residents. The limitations of this study include small sample size with 40% response rate and that residents less-interested in personal psychotherapy may have been less-likely to respond. Based on these findings, program directors may be encouraged to pay more attention to the quality of life of younger and more junior residents.

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**NO. 4**

**EMPATHY OF YOUNG TRAINEES IN KOREA**

*Lead Author: Chanmin Park, M.D.*

*Co-Author(s): Jai Young Lee, Yeon Jung Lee, Minha Hong, Chul-Ho Jung, Yeni Synn,*

*Young-Sook Kwack, Jae-Sung Ryu, Tae Won Park, Seong Ae Lee, Geon Ho Bahn*

**SUMMARY:**

Introduction

Empathy is crucial for doctor-patient relationship and may contribute to the quality of treatment outcome. However, there is not enough data on how to facilitate and/or strengthen empathy during residency and internship training. This study aims to investigate empathy in residents (with various subspecialties) and interns, along with factors which may influence empathy.

Methods

Questionnaire packages including socio-demographic data, Jefferson Scale of Empathy HP-version Korean edition (JSE-HP-K), and Maslach Burnout Inventory (MBI), were answered by 317 out of 751 residents and 122 out of 191 interns from four university hospitals. The specialties of residents were classified into 2 groups: "people-oriented" which includes internal medicine, pediatrics, obstetrics/gynecology, family medicine, rehabilitation medicine, psychiatry, neurology, ophthalmology, dermatology, preventive medicine, emergency medicine, occupational environmental medicine, and tuberculosis; "technology-oriented" such as general surgery, orthopedic surgery, neurosurgery, plastic surgery, thoracic and cardiovascular surgery, otorhinolaryngology, laboratory medicine, anesthesiology, radiology, radiation oncology, pathology, urology, and nuclear medicine.

Results

Among the residents, those with 'people-oriented' specialties, women, married and with children showed significantly higher empathy scores but no difference in burnout scores. Sub-analysis within the "people-oriented" group showed higher empathy scores in 4th-year residents than 1st-year residents.

There were no significant difference in empathy and burnout scores regarding grade, specialty, sex, marital status and children. Those with two or more siblings showed higher empathy scores than those who had one or none.

There were no significant difference in empathy and burnout scores between residents and interns.

Discussion

These results suggest that empathy is associated with specialties and individual factors such as marriage, siblings and children. Whether empathy is determined by personal propensity or influenced by residency programs may be further investigated in future studies.

**NO. 5**

**RESIDENCY TRAINING GAPS IN PSYCHIATRY: PATIENT SAFETY, COST-EFFECTIVE CARE AND POPULATION-BASED APPROACHES**

*Lead Author: Michael Weinberg, Ed.D.*

*Co-Author(s): Melissa R. Arbuckle, M.D., Ph.D., Jules Ranz, M.D.*

**SUMMARY:**

Background: According to the Accreditation Council for Graduate Medical Education, competency in systems based practice (SBP) requires that residents demonstrate "responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care." Given the growing importance of SBP in health care reform, we undertook this study to determine the extent to which psychiatry residents perform behaviors consistent with SBP.

Methods: Based upon the requirements for SBP set by the ACGME and the Residency Review Committee for Psychiatry, we developed an evaluation tool consisting of 60 SBP behaviors. Sixty supervisors from 7 training programs were asked to rate resident performance on a 6-point Likert scale indicating how frequently residents were observed to be engaging in each of the 60 SBP behaviors. The evaluation sample included 105 adult and child residents who were rated in a variety of settings. Since many supervisors indicated that team meetings were not held on their service, 8 items were dropped from the analysis. An average rating for each of the remaining 52 items was determined for each supervisor. Multi-dimensional

scaling was used to determine (1) what and how many dimensions could be used to interpret the data and (2) if the items clustered in any discernible way. An average Likert response for each identified cluster was calculated. A one-way ANOVA was used to compare the mean responses between clusters. The percentage of supervisors who reported residents routinely engaged in these behaviors were also calculated and compared with odds ratios and associated 95% confidence intervals.
Results: Two dimensions fit the data well (R2 = 0.93), and 5 clusters were identified. Differences in the average Likert ratings for the five clusters were significant [F (4, 300) = 27.404, p<0.001] with Cluster I rated higher than the others. Supervisors were also more likely to report routine performance of items in Cluster I (85%) compared to Cluster II (67%, OR=2.81, 95% CI=1.1-4.5), Cluster III (49%, OR=5.97, 95% CI=2.5-14.3), Cluster IV (58%, OR=4.13, 95% CI=1.72-9.89) and Cluster V (30%, OR=13.49, 95% CI=5.49-33.01). Issues pertaining to cost, finances, and affordability, as well as patient safety were exclusively located in the lower rated clusters III, IV and V. There was also a trend with higher rated clusters focusing on issues pertaining to the individual patient, with lower rated clusters more relevant to population based practices.
Conclusions: These results suggest that psychiatric residents less frequently perform these behaviors, suggesting less proficiency in areas pertaining to population health, health care finances and patient safety. Given the growing emphasis of each of these areas in the context of healthcare reform, psychiatric education will need to evolve to make sure that residents are adequately prepared to address these issues.

**NO. 6**

**THE EFFECT OF INTERNALIZED STIGMA ON QUALITY OF LIFE IN PATIENTS WITH BIPOLAR DISORDER AND THEIR CARE-GIVERS**

*Lead Author: Jessica Briggs, B.A.*
*Co-Author(s): Anahita Bassirnia, M.D., Lisa J. Cohen Ph.D., Zimri S. Yaseen M.D., Igor I. Galynker, M.D., Ph.D.*

**SUMMARY:**

Background: Several studies report impaired quality of life in patients with bipolar disorder. However, the relationship between perceived stigma of mental disorder and quality of life has not been investigated in these patients. The aim of this study is to evaluate the impact of internalized stigma on quality of life in patients with bipolar disorder and their caregivers.
Methods: 264 patients and their caregivers participated in our study. Eight different questionnaires were utilized: 1) Demographic data questionnaire, 2) Internalized Stigma of Mental Illness (ISMI), 3) Quality of Life Enjoyment and Satisfaction Scale (QLESQ), 4) Self-Report Manic Inventory (SRMI), 5) Center for Epidemiological Studies – Depression Scale (CES-D), 6) State Trait Anxiety Inventory (STAI), 7) Sheehan Panic and Anxiety Scale (SPAS), and 8) Perceived Stress Scale (PSS). The statistical analyses included student t-test, univariate and multi-variate analyses.
Results: The stigma score was higher in patients compared to their caregivers (p-value: <0.001). There was a significant positive correlation between patients' internalized stigma scores and their anxiety based on STAI (p-value: <0.001), SPAS (p-value: <0.001), and perceived stress level (p-value: <0.001). There was also a significant correlation between internalized stigma scores for patients and their depression scores, measured by CESD (p-value: <0.001). Further, there was a negative correlation between patients' QLESQ and internalized stigma scores (p-value: <0.001). In multivariate analysis, Stigma, STAI, SPAS, and PSS significantly predicted quality of life (r square: .85, p-value: 0.002) in patients, but not in caregivers (r square: .17, p-value: 0.65).
Conclusion: Controlling for anxiety and stress, internalized stigma can significantly predict quality of life in patients with bipolar disorder.

**NO. 7**

**CHOICE OF MENTAL HEALTH SETTING AND ITS RELATION TO SOCIODEMOGRAPHIC AND ATTITUDINAL VARIABLES AMONG MEDICAL PROFESSIONALS**

*Lead Author: Biswadip Chatterjee, M.D.*
*Co-Author(s): Piyali Mandal, M.D., Nand Kumar, M.D., Rajesh Sagar, M.D.*

**SUMMARY:**

Introduction: Stereotyped attitude towards mental illness is prevalent in most societies which result in acceptance of compulsory and restrictive treatment for the psychiatrically ill. Attitude in general population is often influenced by the attitude of the healthcare providers towards such patients. Therefore it is important to understand the attitude of the medical professionals towards the mentally ill and their preference for type of treatment setting.
Aim: To study the relation of socio-demographic and attitudinal variables of medical professionals with the preference for the type of treatment setting for psychiatrically ill.
Methods: After taking an informed consent, 100 non-psychiatrist specialist medical professionals who have never worked in a psychiatric unit were asked to fill a proforma containing detailed socio-demographic and professional profile, Community Attitude Towards Mentally Ill Questionnaire (CAMI), nine-item Attribution Questionnaire (AQ). In addition, respondents were asked to rate their level of agreement on a 5-item Likert scale for statements related to treatment-setting for psychiatric patients (never community-based treatment, always need admission, always need psychiatric hospital and always treatment in prison-like setting) and whether such patients never get well (poor chance of recovery). Effect of socio-demographic, professional and attitudinal variables on the acceptance of different type of treatment-setting was assessed using correlation and regression analysis.
Result: Sixty professionals returned fully-filled questionnaire and were evaluated for the study. The mean age was 27.88 ± 2.49 years and the mean duration of work in medical setting was 8.63 ± 2.82 years. Stepwise regression model revealed that out of five predictor variables, only lack of community attitude and lack of benevolence was significant predictor of non-preference for community treatment, $R^2 = .770$, $F(2, 60) = 100.57$, $p < .001$. Authoritarianism and poor chance of recovery were the most important predictors for preference for compulsory admission $R^2 = .759$, $F(2, 60) = 40.77$, $p < .001$. Poor chance of recovery and lack of community attitude and were the most important predictors for preference for psychiatric hospital setting $R^2 = .487$, $F(2, 60) = 28.47$, $p < .001$. Poor chance of recovery, lack of benevolence and social-restrictiveness were the most important predictors for prison-like psychiatric setting $R^2 = .838$, $F(3, 59) = 101.78$, $p < .001$. Socio-demographic status,

duration of work in medical setting and AQ score had no significant correlation to the choice of psychiatric treatment setting. Conclusion: Though feeling of dangerousness, fear, pity was not found to be predictor for restrictive treatment, stereotyped attitude towards mentally ill and the chronicity of psychiatric illnesses were responsible for the same. Adequate steps need to be taken to address these issues to address such attitude in medical fraternity.

**NO. 8**

**A COMMUNITY-PARTNERED DEVELOPMENT OF ANTI-STIGMA MESSAGES IN AN URBAN, AFRICAN AMERICAN COMMUNITY**

*Lead Author: Thomas A. Reed Jr., B.S.*
*Co-Author(s): Beth Broussard, MPH, C.H.E.S., Michael Compton, MD, MPH, Anthony Crisafio, BS*

**SUMMARY:**

Stigma toward individuals with schizophrenia is associated with psychosocial losses, social exclusion, reduced help-seeking, and difficulty in pursuing recovery. While gains have been made in reducing stigma toward persons with non-psychotic psychiatric illnesses such as depression, more research and development is needed on reducing stigma toward those with schizophrenia. We partnered with a community advisory board in an urban, predominantly African American community to develop three anti-stigma messages, each one to be delivered on a series of three postcards mailed weekly for three weeks. Messages focused on recovery ("Recovery From Schizophrenia is Possible"), illness manifestations ("People With Schizophrenia Sometimes Talk to Themselves, and That's OK"), and social acceptance/inclusion ("Accept People Who Have Schizophrenia"). For example, a sub-message on the recovery postcard was "I am going back to school and my mental illness is not holding me back." To enroll members of the community to participate in the pre-intervention/post-intervention survey-based study, we partnered with eight local community organizations; specifically, two local farmers markets, two senior wellness centers, a neighborhood festival, two financial assistance programs, a neighborhood back-to-school event, and a church festival. We enrolled 414 African American community members to complete a survey assessing stigma from multiple perspectives, to be randomized to one of three anti-stigma messages and receive a series of three weekly postcards, and to complete a post-intervention survey. The survey used measures such as the Social Distance Scale, emotional experiences toward people with schizophrenia, the Attribution Questionnaire, and a new multi-dimensional stigma scale, among other measures. Statistically significant effects of time were observed for three measures of stigma and marginally significant effects of time were apparent for the remaining four measures. Group-by-time interactions were not observed, indicating no clear advantage of one anti-stigma message over the others. Because time effects could have resulted from having completed the pre-intervention survey rather than the postcard intervention itself, follow-up analyses examined effects of time and whether or not the participant reported having received 2–3 postcards. We observed a significant effect of time (but not intervention exposure) for two measures of stigma, and a significant interaction between intervention exposure and time for empathic emotions (e.g., compassion, empathy, respect). This project demonstrates the potential for community-partnered development and testing of schizophrenia-focused anti-stigma messages in specific local communities.

**NO. 9**

**MARY TODD LINCOLN'S MULTI-SYSTEM NEUROPSYCHIATRIC ILLNESS AND DEATH ARE COMPATIBLE WITH UNTREATED PERNICIOUS ANEMIA**

*Lead Author: John G. Sotos, M.D.*

**SUMMARY:**

INTRODUCTION: First Lady Mary Lincoln (ML) (1818-1882) experienced prominent psychiatric symptoms and numerous poorly-defined physical complaints in adulthood that remain undiagnosed. The personality disorders, mood disorders, and "madness" diagnosed by her family, friends, contemporary media, and modern scholars do not explain her physical symptoms, and poorly fit the totality of her recorded psychopathology.
HYPOTHESIS: A single organic illness explains ML's physical complaints and mental abnormalities.
METHODS: Absent extant medical records for ML, I reviewed 300+ historical sources about the Lincoln family, including all 678 of ML's surviving letters, and published in 2008 a 62-page compendium of her medically relevant findings--with no unifying diagnosis. New information in 2012 suggested a diagnosis of pernicious anemia (PA). The compendium was reviewed and enlarged [circa 30%] to test if a diagnosis of PA could (a) be ruled out and (b) account for all of ML's major signs and symptoms.
RESULTS: ML's physical ailments spanned 30 years and included sore mouth, pallor, paresthesias, the Lhermitte symptom, fever, headaches, fatigue, resting tachycardia, edema, episodic weight loss, and, late in life, progressive weakness, ataxia, and visual impairment. Her psychiatric symptoms, spanning 20+ years, included marked irritability, fixed delusions (especially financial), florid hallucinations (prompting a 3-month psychiatric institutionalization), and manic-like shopping, but with highly preserved clarity and intellectual function.
All these mental and physical findings, time course included, occur in evolving severe PA. In the 1800s PA was both a protean physical and a protean psychiatric illness, running a decades-long course, with mood disorders and psychoses, plus irritability, commonly coexisting with overall clarity. She had no findings incompatible with PA, and no suggestion of other causes for cobalamin deficiency. Searches for alternative unifying diagnoses yielded none. Her physical phenotype is typical of Northern Europeans having PA, and both her consanguineous parents derived from a Scottish region with widely prevalent PA.
CONCLUSIONS: PA fully explains ML's mental and physical findings. The physical findings are more specific. Her terminal course was typical of fatal PA. Bereavement-related anorexia after personal tragedies likely exacerbated her deficiency.
DISCUSSION: After effective therapy for PA appeared in the 1920s, clinicians no longer saw the severe, protracted, uniformly fatal syndrome of untreated disease--explaining its non-diagnosis in ML. A psychiatric diagnosis of PA clarifies the conduct of ML as First Lady and widow, and illuminates challenges faced by her husband, President Abraham Lincoln. Her case highlights many forgotten features of the natural history of untreated PA, and is a potent reminder that organic disease must always be considered before diagnosing an idiopathic psychiatric illness.

**NO. 10**

**ENVIRONMENTAL SENSITIVITIES OF MOOD IN OLD ORDER AMISH**

*Lead Author: Ameya U. Amritwar, M.B.B.S., M.D.*
*Co-Author(s): Tyler B Jennings, B.S., Hassan McLain, BS, Teodor T Postolache, M.D., Uttam K Raheja, M.D. , Aamar R Sleemi, M.D. , Dipika Vaswani, M.D. , Hassan K Yousufi, B.S.*

**SUMMARY:**

Background: Recurring fall/winter episodes with spontaneous remission in spring define winter type of seasonal affective disorder (wSAD) and recurring summer episodes with remission in fall define summer SAD (sSAD). wSAD is reportedly triggered by shortening day-length and reduction in light exposure in vulnerable individuals, and successfully treated with bright light treatment. sSAD was hypothesized to be triggered by heat , with several reports suggesting improvement with exposure to cold. Our objective was to investigate environmental sensitivities of mood and their relationship to seasonal patterns of SAD in the Old Order Amish (OOA). OOA have an increased exposure to the macro-climate by not using power grid artificial-light and air-conditioning.

Methods: SAD was estimated from 1314 Seasonal Pattern Assessment Questionnaires (SPAQs) . Mood sensitivities to cloudy , hot , humid , sunny , dry , gray cloudy, foggy/smoggy conditions , and long or short days were compared between wSAD, sSAD and normal participants using ANOVAs , t-tests and chi-sq.

Results: wSAD subjects reported increased mood worsening with short and cloudy days($p<0.001$) and sSAD subjects reported mood worsening with humid and foggy/smoggy weather ($p<0.005$) but not with hot days. Only the wSAD sensitivities resisted Bonferroni adjustment for multiple comparisons.

Conclusion: This is, to our knowledge, the first study on environmental sensitivities in a population not connected to the electric-grid. As expected, those with sSAD reported being adversely affected by short days and cloudy days, while the hypothesized heat effect was not confirmed. Thus the sSAD as an “estivation” human analogue is not confirmed.

**NO. 11**

**USE OF VERY-HIGH DOSE OLANZAPINE IN TREATMENT RESISTANT SCHIZOPHRENIA**

*Lead Author: Jean-Marie Batail, M.D.*
*Co-Author(s): Sophie Bleher, M.D., Clement Lozachmeur, M.D., Gabriel Robert, M.D., Ph.D., Bruno Millet, M.D., Ph.D., Dominique Drapier, M.D., Ph.D.*

**SUMMARY:**

Introduction: schizophrenia is a chronic illness having a progressive course that can be dispersed with resistance to anti-psychotic treatment (1). Therefore, therapeutic support is sometimes difficult for the practitioner with partial and unsatisfactory results. In the literature, treatment with high-dose olanzapine (>20mg/d) appears to be a good alternative to clozapine, the gold standard of treatment resistant schizophrenia (2,3). Our study focused on comparing the clinico-biological profile of patients treated with high-doses and recommended doses (≤ 20 mg/d) of olanzapine. Material and method: 50 patients were clinically (Mini International Neuropsychiatric Interview, Positive And Negative Syndrom Scale, Clinical Global Impression, Extrapyramidal Symptom Rating Scale, Udvalg for Kliniske Undersogelser (UKU) Side Effect Rating Scale) and biologically (trough olanzapine and N-desmethyl olanzapine blood levels) evaluated. All patients were assessed only once, at a steady state regimen of olanzapine (8 days at least). Results: a linear relationship was found between the oral dose of olanzapine and the serum concentration (R (Pearson) = 0.83, $p < 0.001$) with an effect of tobacco ($p < 0.05$) and of consumption of coffe and tea ($p < 0.01$). Tolerance seems to be good regardless of the dose. No link between the concentration and efficiency was found. Discussion: despite the non-exhaustive evaluation of pharmacokinetic parameters in the manner of pharmacogenetic data such as the genotyping of the cytochrome P 450-1A2 or glycoprotein P Abcb1a, pharmacokinetic aspects alone do not explain the psychopharmacological rational behind the resistance to 20 mg of olanzapine while a response is sometimes found at higher doses. Conclusion: a nuclear imaging study exploring cerebral occupancy of dopaminergic D2 receptors by high-dose olanzapine, coupled with the above mentioned pharmacokinetic assessments may be a relevant experimental paradigm in the study of the physiopathological mechanisms of resistant schizophrenia.

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**NO. 12**

**A COLLAGEN CONDITION IS A STRONG LINK BETWEEN AUTONOMIC DYSTFUNCTION, SOMATIC AND PSYCHOPATHOLOGIC CONDITIONS**

*Lead Author: Antonio Bulbena, M.D., M.Sc., Ph.D.*
*Co-Author(s): Guillem Pailhez MD., PhD., Andrea Bulbena-Cabré MD, MSc, Anna Cabrera MD, Carolina Baeza-Velasco PhD, Judith Reche, PhD, Stephen Porges Ph.D*

**SUMMARY:**

Objectives: To evaluate joint hypermobility in a sample of students aged between 15 and 18 years, in relation to 1) frequency of being regularly visited by a psychiatrist/psychologist, 2) level of awareness of body processes and reactivity of the autonomic nervous system, and 3) frequency of autonomic-related illnesses.

Method: A Cross-sectional study was conducted in a Secondary School in Barcelona, Spain. The sample consisted of 117 subjects (33 males and 84 females), who willingly filled a socio-demographic questionnaire (including visits to Psychiatrist/Psychologist), the Self-reported Screening Questionnaire for Collagen condition and Hypermobility’s assessment (SQ-CH) and the Spanish version of the Body Perception Questionnaire (BPQ), which includes systematic assessment of several conditions. Student’s t and Chi squared tests were used to assess rates, proportions and comparisons according to the presence of the collagen condition.

Results: Joint hypermobility was found in 33.3% of the subjects. Those who were regularly visited by a psychiatrist/psychologist (27.4%) were found to be more hypermobile [50% vs. 27.1%; chi=4.52; p=.033]. Hypermobile subjects had higher scores on each BPQ subscale [awareness: t=2.5, p=.012; stress response: t=2.8, p=. 007; reactivity: t=2.6, p=.01] and greater frequency of reported experience of hopeless/unhappiness [72.7% vs. 24.2%; chi=18.9; p<. 001], clinical depression [77.8% vs. 25.3%; chi=18.9; p<. 001], bulimia [75% vs. 30.3%; chi=6.71; p=.016], anorexia [80% vs. 31.2%; chi=5.12; p=.042], eczema [70% vs. 29.9%; chi=6.6; p=. 015], anxiety disorders [83.3% vs. 27.6%; chi=15.04; p<.001], and severe menstrual cramps [51.2% vs. 27.9%; chi=5.72; p=.022].
Conclusion: Results show that mental disorders (particularly anxiety disorders) and autonomic dysfunction are more prevalent in subject with hypermobile joints and is consistent with previous research findings. These subjects tend to suffer from a particular cluster of mental and somatic disorders that share some common abnormalities both in the autonomic nervous system and in the collagen structure as found in joint hypermobility. This may be a diathesis not yet identified, but worthy to investigate.

**NO. 13**

**CEREBRAL EVENT-RELATED POTENTIAL (ERP) METHODS: IN SEARCH OF A MOLECULAR LOGIC AND MEASURABLE NEUROPHYSIOLOGICAL TARGETS FOR SCHIZOPHRENIA**

*Lead Author: Zeinab S. Elbaz M.D.*
*Co-Author(s): Adam Y. Elbaz, Colombia University.*

**SUMMARY:**

Learning Objectives: At the conclusion the participant will be able to reformulate psychopathology in schizophrenia to present a scientifically testable model closely related to the natural neurophysiological mechanisms of the brain. The utility of ERP methods will be explored in an effort to deconstruct this illness for genetic analysis and as biological markers. Methods: Integrating recent research and clinical data on the subject using PubMed and Medline database. Discussion: ERP approaches to understanding information processing deficits and their neural substrates in schizophrenia have been going rapid technological advancement in recent years. The superior temporal resolution of ERP methods, combined with increasing spacial resolution continues to offer distinct advantages for studies that seek sensory, perceptual and cognitive tasks. ERPs can be divided into sensory and cognitive components. The sensory are sensitive to physical characteristics of the stimulus and arise in the first 200ms post stimulus. The later component, cognitive component such as P300 wave are sensitive to psychological processes such as attention and memory. In general the early sensory responses are normal in schizophrenia. Reduced P300 amplitude has been among the most robust ERP results for schizophrenia. P300 paradigms have bolstered the evidence that schizophrenia patients have deficits in maintaining attention and show inappropriate allocation of attentional resources to novel distracting stimulus. P300 reduction has been linked to thought disorder levels and reductions in the volume of left superior temporal gyrus among schizophrenia patients. In another line of investigations, researchers reported that the auditory P300 amplitude is genetically influenced at Centro-parietal sites and indicate that P300 may serve as an endophenotype for functional psychosis. Conclusion: ERP methods will allow the translation of observable subjective and objective phenomena in schizophrenia to brain dysfunctions and a scientifically testable model. These intermediate steps may provide biological markers and endophenotypes that simplify the search for genetically transmitted components of vulnerability to schizophrenia.
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**NO. 14**

**SCHIZOPHRENICS HAVE A HIGH PREVALENCE OF LOSS OF FUNCTION OF TISSUE PLASMINOGEN ACTIVATOR**

*Lead Author: Silvia Hoirisch-Clapauch, M.D.*
*Co-Author(s): Antonio E Nardi, M.D., Ph.D.*

**SUMMARY:**

Introduction: We have previously reported that five patients entered psychotic symptom remission months after beginning warfarin to treat deep venous thrombosis (DVT) and have remained free of psychotropic medication from 2 to 11 years. Hypothesis: Assuming that this beneficial effect could be mediated by tissue plasminogen activator (tPA) and its end product, plasmin, which are involved in brain derived neurotrophic factor activation, neuronal protection from excitotoxin-induced cell death and hippocampal neurogenesis, one would expect a high prevalence of loss of function of tPA among psychotic patients. Methods: Clinical and laboratory markers of loss of function of tPA were analyzed in 60 schizophrenics (DSM-IV) aged 18 to 60 years, seen at a University Clinic. Results were compared to 98 healthy controls. Results: The clinical history of schizophrenics, suggesting either inadequate fibrinolysis or abnormal angiogenesis, provided strong evidence of loss of function of tPA: seven patients had had either an ischemic stroke before 50 years of age or a DVT (12% vs. 2% of controls), 12 women reported severe dysmenorrhea during early adolescence (50% vs. 12%) and four of the women who got pregnant before they were started on psychotropic drugs had had either one or more stillbirths or at least one preterm delivery related to severe placental insufficiency (50% vs. 0). All patients had 1–6 laboratory markers (mean 2.1), except for two patients with no markers. Eighteen had moderate or high titers of one or more antiphospholipid antibodies (30% vs. 0), which can directly or indirectly inhibit tPA. Thirteen had low free-protein S levels (22% vs. 0). A multimeric form of protein S is able to inhibit plasminogen activator inhibitor-1 (PAI-1), the major inhibitor of tPA, so that low levels of protein S inhibit tPA. A total of 22 patients had > 20% increase in fasting insulinemia (37% vs. 11%). Insulin and its precursors have been shown to stimulate the PAI-1 promoter, increasing PAI-1 production. Fourteen had hyperhomocysteinemia (23% vs. 5%). Elevated levels of homocysteine prevent tPA binding to annexin A2, which affects the catalytic properties of tPA. Eighteen patients were homozygous, double heterozygous or double homozygous for methylene tetrahydrofolate reductase C677T or A1298C (30% vs. 15%), polymorphisms that may lead to hyperhomocysteinemia in individuals with low folic acid intake. The presence of the 4G

allele in the PAI-1 gene, which increases the basal transcription of PAI-1, was seen in 36 patients (60% vs. 48%). Thrombophilias equally prevalent among schizophrenics and controls were: heterozygous factor II G20210A (2% vs. 1%), heterozygous factor V Leiden (3% vs. 2%), antithrombin III and protein C deficiency (not detected in patients or controls). Conclusion: Our findings suggest that protocols aiming to normalize tPA function may offer new pharmacological tools for the treatment of schizophrenia (supported by Faperj E-26/110.643/2012).

**NO. 15**

**EFFECTS OF ANTIPSYCHOTIC DRUGS ON THE EXPRESSION OF SYNAPSE-ASSOCIATED PROTEINS IN THE FRONTAL CORTEX OF RATS SUBJECTED TO IMMOBILIZATION STRESS**

*Lead Author: Young Hoon Kim, M.D., Ph.D.*
*Co-Author(s): Chan Hong Lee, Hye Yeon Cho, Mi Kyoung Seo, Jung Goo Lee, Bong Ju Lee, Mi Ru Kim, Baik Seok Kee, Sung Woo Park, and Young Hoon Kim*

**SUMMARY:**

Introduction: Regulation of synaptic plasticity has been implicated in the pathophysiology and treatment of schizophrenia. The present study examined the effects of three antipsychotic drugs, olanzapine, aripiprazole, and haloperidol, on the expression of synapse-associated proteins in the frontal cortex of rats with and without immobilization stress.
Methods: Rats were subjected to immobilization stress 6 h/day for 3 weeks. The effects of two atypical antipsychotic drugs, olanzapine (2 mg/kg) and aripiprazole (1.5 mg/kg), on expression of serine9-phosphorylated GSK-3β, β-catenin, BDNF, PSD-95, and synaptophysin were determined by Western blotting. A typical antipsychotic drug, haloperidol (1.0 mg/kg), was used for comparison.
Results: Immobilization stress significantly decreased the expression of phosphorylated GSK-3β, β-catenin, BDNF, PSD-95, and synaptophysin in the frontal cortex (all $p < 0.01$). Chronic administration of olanzapine and aripiprazole significantly attenuated the immobilization stress-induced decrease in the levels of these proteins ($p < 0.01$ or $p < 0.05$), whereas chronic administration of haloperidol did not in this regard. Additionally, chronic administration of olanzapine ($p < 0.05$) and aripiprazole ($p < 0.01$) significantly increased levels of phosphorylated GSK-3β under normal conditions without stress, and chronic administration of aripiprazole also increased BDNF levels under this condition ($p < 0.01$).
Conclusions: These results indicate that two atypical antipsychotics, olanzapine and aripiprazole, and one typical one, haloperidol, differentially regulate the levels of synapse-associated proteins in the rat frontal cortex. These findings may contribute to neurobiological basis of how olanzapine and aripiprazole improve the cognitive symptoms of patients with schizophrenia by suggesting that their mechanism of action involves up-regulation of synapse-associated proteins.
Key words: Atypical antipsychotic drugs, Typical antipsychotic drugs, Synaptic plasticity, Synapse-associated proteins, Immobilization stress

**NO. 16**

**EFFECTS OF MOOD-STABILIZING DRUGS ON DENDRITIC OUTGROWTH AND SYNAPTIC PROTEINS LEVELS IN THE PRIMARY HIPPOCAMPAL NEURONS**

*Lead Author: Young Hoon Kim, M.D., Ph.D.*
*Co-Author(s): Hye Yeon Ch , Chan Hong Lee, Mi Kyoung Seo, Jung Goo Lee, Wongi Seol,*
*Bong Ju Lee, Mi Ru Kim, Baik Seok Kee, Sung Woo Park, and Young Hoon Kim*

**SUMMARY:**

Introduction: Mood stabilizers, such as lithium (Li) and valprate (VPA), are widely used for the treatment of bipolar disorder, a disease marked by recurrent episodes of mania and depression. Growing evidence suggests that Li exerts neurotrophic and neuroprotective effects, leading to an increase in neural plasticity. The present study investigated whether other mood-stabilizing drugs produce similar effects in primary hippocampal neurons.
Methods: Effects of the mood-stabilizing drugs Li, valproate (VPA), carbamazepine (CBZ), and lamotrgine (LTG) on hippocampal dendritic outgrowth were examined. Western blotting analysis was used to measure the expression of synaptic proteins, i.e., brain-derived neurotrophic factor (BDNF), postsynaptic density protein-95 (PSD-95), neurolignin 1 (NLG 1), β-neurexin, and synaptophysin (SYP), under toxic conditions induced by B27 deprivation, which causes hippocampal cell death.
Results: Li (0.5–2 mM), VPA (0.5–2 mM), CBZ (0.01-0.05 mM), and LTG (0.01-0.05 mM) significantly increased dendritic outgrowth ($p < 0.05$ or $p < 0.01$, respectively. The neurotrophic effect of Li and VPA was blocked by inhibition of phosphatidylinositol 3-kinase (PI3K), extracellular signal-regulated kinase (ERK), and protein kinas A (PKA) signaling ($p < 0.05$ or $p < 0.01$); the effects of CBZ and LTG were not affected by inhibition of these signaling pathways. Li, VPA, and CBZ significantly prevented B27 deprivation-induced decreases in BDNF, PSD-95, NLG 1, β-neurexin, and SYP levels ($p < 0.05$ or $p < 0.01$), whereas LTG did not.
Conclusions: Taken together, these results suggest that Li, VPA, CBZ, and LTG exert neurotrophic effects by promoting dendritic outgrowth; however, the mechanism of action differs. Furthermore, certain mood-stabilizing drugs may exert neuroprotective effects by enhancing synaptic protein levels against cytotoxicity in hippocampal cultures.
Key words: Mood-stabilizing drugs, Neural plasticity, Dendritic outgrowth, Synaptic proteins, Signaling

**NO. 17**

**EFFECTS OF TIANEPTINE ON MTOR SIGNALING IN RAT HIPPOCAMPAL NEURONS**

*Lead Author: Young Hoon Kim, M.D., Ph.D.*
*Co-Author(s): Mi Kyoung Seo, Chan Hong Lee, Hye Yeon Cho, Sung Woo Park, Bong Ju Lee, Mi Ru Kim, Wongi Seol, Baik Seok Kee, Jung Goo Lee, and Young Hoon Kim*

**SUMMARY:**

Introduction: Recent studies have demonstrated that antidepressant effect of NMDA antagonist ketamine activates rapidly the mTOR pathway and increase synaptic proteins the prefrontal cortex. mTOR is a protein kinase involved in the regulation of translation initiation and protein synthesis required for synaptic plasticity. Recent studies suggest that mTOR activation may be related to the antidepressant action. However, the mTOR signaling underlying antidepressant drugs action has not

been well elucidated. The aim of the present study was to find out whether alterations in mTOR signaling could be observed following treatment with tianeptine. Additionally, we investigate whether this drug affect the synaptic proteins and neurite outgrowth via mTOR signaling.
Methods: For purposes of western blotting and neurite assay, primary rat hippocampal neuronal cultures were cultured for 4 days and 5 days, respectively, with tianeptine. Control cells were cultured without tianeptine under the B27-deprived condition (for western blotting) or normal condition (for dendrite outgrowth aasay). Using Western blotting, we measured changes in the phosphorylation of mTOR, its well-known downstream regulators (4E-BP-1 and p70S6K), and its upstream regulators (Akt and ERK) under toxic conditions induced by B27 deprivation in rat hippocampal neuronal cultures. Dendritic outgrowth of hippocampal neurons was determined by dendrite outgrowth aasay. Dendrites were visualized by immunostaining with MAP2 known as a dendritic marker. Aditionally, the synaptic proteins, PSD-95 and synaptophysin, were also examined by Western blotting.
Results: In this study, tianeptine significantly elevated the levels of phospho-mTO, phospho-4E-BP-1, and phospho-p70S6K in a concentration-dependent manner. Moreover, tianeptine elevated the phosphorylation of Akt and ERK. Additionally, increased mTOR phosphorylation induced by tianeptine was significantly blocked by the specific PI3K, MEK, or mTOR inhibitors, respectively. Tianeptine also provocated hippocampal dendritic outgrowth and simultaneously increased levels of the synaptic proteins, PSD-95 and Synaptophysin. The effect of tianeptine was blocked by the mTOR inhibitor, rapamycin.
Conclusions: In this study, we observed novel -in vitro evidence indicating that tianeptine promoted dendritic outgrowth and increased synaptic protein levels through mTOR signaling. mTOR signaling may be a promising target for discovery of new antidepressant drugs.
Keywords: Tianeptine, mTOR, Dendrite outgrowth, Synaptic proteins, Hippocampus

**NO. 18**

**INSIGHT INTO ILLNESS AND UNCOOPERATIVENESS IN CHRONIC SCHIZOPHRENIA**

*Lead Author: Cynthia Siu, Ph.D.*
*Co-Author(s): Ofer Agid, M.D., Mary Waye, Ph.D., Carla Brambilla, M.Sc., Wing-Kit Choi, M.D., Gary Remington, M.D., Ph.D., Philip Harvey, Ph.D.*

**SUMMARY:**

Background: Lack of insight into illness is a well-established phenomenon in schizophrenia. Poor insight has been associated with psychosocial dysfunction and increased re-hospitalization rates, as well as a barrier to accepting and staying in treatment. Reduced insight has been correlated with less rater-assessed functional performance, but better self-report well-being overall in previous studies. The objective of this study was to examine factors that might influence insight, uncooperativeness, and self-assessment of quality-of-life using the large National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness CATIE dataset.
Methods: Insight was assessed by the Insight and Treatment Attitudes Questionnaire (ITAQ) and PANSS item G12 “lack of judgment and insight”. Social and occupational functioning was assessed using the Heinrichs-Carpenter Quality of Life (HCQoL) scale, while self-report well-being overall was assessed with the Lehman QoL Interview (LQOLI). Uncooperativeness was assessed by PANSS item G8 (“Uncooperativeness”). We conducted a cross-sectional and longitudinal multivariate analysis to evaluate the potential mediating relationships.
Results: Consistent with previous reports (Mohamed et al., 2009), we found better insight into illness (higher ITAQ score) was associated with higher functioning (higher HCQoL total score, $p<0.05$), greater neurocognitive composite ($p<0.05$) and reasoning ($p<0.05$) performance, but there was an inverse correlation to lower self-report well-being overall (lower LQOLI, $p<0.05$) and a higher level of depressive symptoms ($p<0.05$) in patients with chronic schizophrenia. We also found the inverse relationship at baseline between insight and self-report LQOLI was explained, in part, by levels of depressive symptoms ($p<0.001$) and neurocognitive reasoning impairment ($p<0.05$). Overall cognitive performance was not significant after adjusting for depression effect ($p>0.05$). Among subjects with mild or no depressive symptoms on all 9 items of the Calgary Depression Scale (N=839), better self-report well-being overall (LQOLI) was associated with poorer insight ($p<0.05$) and lower cognitive reasoning performance ($p<0.05$) after adjusting for age and symptom severity (CGI-S). Improved insight into illness over time was longitudinally associated with reductions in uncooperativeness symptoms (PANSS G12) ($p<0.001$).
Conclusions: Our findings suggest that poorer insight and attitudes toward treatment had significant associations with higher level of uncooperativeness, lower level of neurocognitive reasoning, and less depression, which in turn impacts self-report assessment of well-being overall. Improvement in insight over time was longitudinally associated with reduction in uncooperativeness symptoms. These results suggest the importance of reducing insight and cognitive impairments both for functional improvement and willingness to accept treatments.

**NO. 19**

**TASIMELTEON, A DUAL MELATONIN RECEPTOR AGONIST FOR TREATMENT OF NON-24 HOUR DISORDER: POOLED SAFETY ANALYSIS IN PLACEBO CONTROLLED RANDOMIZED TRIALS**

*Lead Author: Todd J. Swick, M.D.*
*Co-Author(s): Joseph A. Sliman, M.D., M.P.H., Marlene A. Dressman, Ph.D., Changfu Xiao, Ph.D., Louis Licamele, Ph.D., Paolo Baroldi, M.D., Ph.D., Mihael H. Polymeropoulos, M.D.*

**SUMMARY:**

Introduction: Tasimelteon is a novel circadian regulator developed for the treatment of Non-24-Hour Disorder (Non-24) in the totally blind, a serious circadian disorder with no current FDA-approved treatment. Tasimelteon is a dual melatonin receptor agonist with selective activity at the MT1 and MT2 receptors in the suprachiasmatic nucleus. Standard safety assessments were performed during development and, given tasimelteon’s centrally acting mechanism, prospective assessments of suicidality were made using the Columbia Suicide Severity Rating Scale (C-SSRS).
Methods: A pooled analysis of two phase III placebo-controlled studies in blind Non-24 patients and two phase II placebo-controlled studies of insomnia (n=429 tasimelteon, N=203 placebo) assessed the safety of daily 20mg tasimelteon treatment through collection of clinical adverse events and clinical

laboratory results. Additional assessments of the potential for abuse, dependence, next-day effects, withdrawal, and endocrine function were also performed.
Results: In total, 111 individuals were treated with tasimelteon 20 mg daily for at least 26 weeks, with 44 of these individuals treated for at least 52 weeks of therapy. Reported adverse events among tasimelteon-treated patients were similar to the rates identified in placebo-treated patients. Vivid or unusual dreams were reported at a higher rate among treated subjects compared to placebo (2.6%, 0.5%) but were not considered a safety signal. There was no evidence of next-day effects, abuse, or withdrawal, and no evidence of endocrine safety signals associated with tasimelteon treatment. Serious adverse event rates were similar between treatment groups (1.6% among tasimelteon-treated patients compared to 1.5% among placebo-treated patients), and no serious adverse event was attributed to study drug. tasimelteon was not associated with an adverse effect on suicidality as assessed by the C-SSRS.
Conclusion: Tasimelteon was well-tolerated in both studies in blind patients with Non-24, and in both studies of patients with primary insomnia. There was no evidence of increased risk of suicidality observed with tasimelteon treatment.

**NO. 20**

**PRO-INFLAMMATORY AND IMMUNOLOGIC INTERLEUKINS IN RELOCATED HURRICANE SURVIVORS AND MATCHED CONTROLS WITH PSYCHIATRIC DISORDERS**

*Lead Author: Phebe M. Tucker, M.D.*
*Co-Author(s): Pascal Nitiema, M.P.H., Qaiser Khan, M.P.H., Theresa Garton, M.D.*

**SUMMARY:**

Introduction: Various mental disorders, including mood and anxiety disorders, are associated with changes in interleukins, glycoprotein cytokines important in the immune system and inflammation. We assessed psychiatric symptoms and disorders, Interleukin-2 (reflecting cell-mediated immunity) and Interleukin-6 (a pro-inflammatory cytokine) in relocated Hurricane Katrina survivors and controls frequency-matched on gender and ethnicity with survivors. We hypothesized that Katrina survivors would have higher rates of major depression and PTSD, lower IL-2 and higher IL-6 than non-exposed controls, and that individuals with PTSD and depression, particularly those exposed to Katrina, would differ in both cytokines compared to individuals without these disorders.
Methods: We assessed 40 relocated Katrina survivors and 40 demographically-matched, non-hurricane-exposed Oklahoma controls who were recruited from the same relief agencies and through other referrals. SCID-IV diagnosed major depression, PTSD and other mental disorders and BDI substantiated depression diagnoses. Serum Interleukin-2 and Interleukin-6 levels were obtained. Pearson, chi-square and Fisher's exact tests compared diagnoses for both groups, and linear regression models with logarithmic transformation of the dependent variable compared cytokine levels in survivor and control groups according to psychiatric diagnoses. All tests were significant if $p<0.05$.
Results: Survivors had higher rates of current depression and PTSD, but not lifetime PTSD, than controls, and did not differ in IL-2 or IL-6. Among diagnostic groups, all participants with lifetime PTSD had higher pro-inflammatory IL-6 than all participants without lifetime PTSD ($p=0.0412$) after adjusting for sex, age, ethnicity, and hurricane exposure, but these groups did not differ in IL-2 (cell-mediated immunity) ($p=0.7766$). Of note, all participants with any diagnosed mental disorder (PTSD, MDD, OCD, bipolar disorder, panic disorder, or Schizophrenia) had both higher IL-6 ($p=0.0475$) and unexpectedly higher IL-2 ($p=0.0107$) than all those without a psychiatric diagnosis, after adjusting for other covariates.
Conclusions: PTSD, rather than disaster exposure alone or depression diagnosis, was linked with a higher inflammatory response but with no difference in the immunological IL-2. Increased IL-6 in the presence of any psychiatric disorder compared to the absence of a disorder support a non-specific nature of the inflammatory response across diagnostic categories as noted in other studies of various mental disorders; this may have implications for health or future treatments. Increased IL-2 (reflecting cell-mediated immunity) with any mental disorder suggested an unprecedented enhancement of the immune response among these participants that may have protective effects. Socioeconomic status of our demographically-matched participants may have impacted their rates of psychopathology and related interleukin levels.

**NO. 21**

**DETERMINANTS AND NEUROANATOMICAL CORRELATES OF MAJOR DEPRESSION THAT IS COMORBID WITH PARKINSON'S DISEASE**

*Lead Author: Hale Yapici-Eser, M.D., Ph.D.*
*Co-Author(s): Zeynel Baran, Ph.D., Ayşe Bora Tokçaer, M.D., Aslı Kuruoğlu, M.D, Melike Güryıldırım, M.D, Yusuf Öner, M.D, Turgut Tali, M.D*

**SUMMARY:**

Introduction: A significant number of the patients that have an idiopathic Parkinson's disease (IPD) diagnosis are also diagnosed with comorbid depression which is a major factor that changes their quality of life. It is suggested that depression may be the result of psychosocial stress or neurodegeneration, but the psychosocial and neurobiologic aspects of this comorbidity are not well-known. In this study, it is aimed to define the psychosocial determinants and neuroanatomical correlates of the depression that is comorbid with IPD. Method: 55 IPD patients were evaluated with SCID-I, sociodemographic data form and other clinical scales. After the psychiatric evaluation, 7 antidepressant-naïve IPD patients that had comorbid depression were matched with 7 IPD patients that did not have a comorbid depression, for age, gender, educational status, UPDRS scores and duration of IPD symptoms. Data from the two research groups were compared for gray and white matter volumes using voxel based morphometry analysis and for task related activations using emotional stroop functional magnetic resonance imaging. Results: Depression was the most frequent psychiatric diagnosis in IPD patients and it was followed by generalized anxiety disorder (20 %). The diagnosis of lifetime depression (45.5 %), depression in the last month (25.5 %) and depression before IPD diagnosis (20 %) was common in IPD. Sociodemographic variables, IPD lateralization, IPD family history, number of antiparkinsonian drugs and comorbid diseases of the patients that have a depression diagnosis were not significantly different from the patients that did not have a depression. The major determinants of having a depression diagnosis

in the last month and before IPD diagnosis were early IPD onset and young patient age. Pramipexole treatment was significantly low in IPD patients that have a comorbid depression (% 7 vs % 36). Compared to IPD patients that did not have a comorbid depression, IPD patients that had a comorbid depression showed significant volume reductions in left precuneus and paracentral lobule white matter and right inferior parietal, inferior frontal gyrus and left medial and superior frontal gyrus gray matter ($p<0.05$, cluster size 200), but no difference in striatal structures and anterior cingulate. Right medial frontal cortex had both decreased gray matter volume and decreased activation during emotional stroop task in depressed IPD patients. Conclusion: This study points out that depression is frequently comorbid in IPD. Depression may be a preceding factor that decreases the age of onset of vulnerable IPD patients or it may be a prodromal symptom of IPD. Gray matter volume and stroop-activated brain region changes observed in depressed IPD patients suggest that depression in IPD may have different neuroanatomical correlates compared to the depression in the general population. Further studies with larger sample sizes are needed to replicate the results of this study.

**NO. 22**

**STUDY OF PERFUSION AND MORPHOMETRIC ABNORMALITIES IN TREATMENT RESISTANT DEPRESSION**

*Lead Author: Jean-Marie Batail, M.D.*
*Co-Author(s): Dominique Drapier, M.D., Ph.D., Jean-Christophe Ferre, M.D., Ph.D., Jean-Yves Gauvrit, M.D., Ph.D., Christian Barillot, Ph.D., Isabelle Corouge, Ph.D., Bruno Millet, M.D., Ph.D.*

**SUMMARY:**
Introduction : depression is a recurrent and disabling disease. After a first depressive mood disorder episode, relapse risk is estimated at 50%. To date, pathophysiological processes involved in depressive mood disorder remain unclear. Arterial Spin Labeling is an innovative, non invasive, perfusion imaging technique. It allows cerebral blood flow quantification (1). It has been used to study pathophysiological patterns of treatment resistant mood depressive disorder (TRD, Treatment Resistant Depression) but with divergent results (2,3). To our knowledge, no study have assessed both morphometric and perfusion abnormalities involved in this disease. Material and method : this work aimed to assess morphometric and perfusion abnormalities in patients suffering from a mood depressive episode (score at Hamilton Depression Rating Scale - HDRS > 15) and stratified in two populations : patients with TRD (corresponding to stage V of Thase and Rush classification, except MAO use) and patients with recurrent depressive disorder (NRD, e.g. Non Resistant Depression) (at least two episodes in their history) who respond to antidepressant (assessed by a reduction of at least 50% of HDRS baseline's score after 6 weeks of treatment). Results : we found an hyperperfusion located in right amygdala ($p=0.02$) and right hippocampus ($p=0.02$) in TRD patients. Thus, we found atrophy in cortical regions as orbitofrontal cortex ($p<0.001$), anterior cingular cortex ($p=0.002$) in NRD and TRD patients. Right and left hippocampus were hypertrophied (respectively $p=0.004$, $p<0.001$) in TRD patients in comparison with NRD patients. Discussion : this study have reproduced some known pathophysiological data about depression like hyperperfusion of limbic regions (amygdala) which seems to be a state marker of depressive disorder. The hypertrophy of the amygdala-hippocampus axis must be discussed in the light of some confounding factors like mood stabilizers used in TRD and identifed to have neurotrophic effects on such cerebral structures. Conclusion : this study have highlighted that the combination of morphometric and perfusion data could contribute to a better stratification of patients suffering from recurrent depressive mood disorder.

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**NO. 23**

**PROTON MAGNETIC RESONANCE SPECTROSCOPY (MRS) IN PATIENTS WITH ONLINE GAME ADDICTION**

*Lead Author: Doug Hyun Han, M.D.*
*Co-Author(s): Young In Kim, M.D., Sung Yong Park, M.D., Young Sik Lee, M.D., Ph.D., Xianfeng Shi, Ph. D., Perry F. Renshaw, M.D., Ph.D.*

**SUMMARY:**
Introduction
Recent brain imaging studies have suggested that both frontal and temporal cortices are important candidate areas for mediation of the symptoms of internet addiction. Reductions in N-acetyl aspartate (NAA) levels and cytosolic, choline containing compound (Cho) signals, both of which may be measured using positron magnetic resonance spectroscopy (MRS), may reflect loss of neuronal integrity. Based on published MRS studies of attention deficit hyperactivity disorder (ADHD) and major depressive disorder (MDD) that are commonly associated with internet addiction, we hypothesized that deficits of prefrontal and temporal cortices in patients with on-line game addiction with the evidence of decreased levels of NAA and Cho and dysfunction in Wisconsin Card Sorting Test (WCST).
Methods
Seventy three adolescents and adults with problematic on-line game play (PGA) who visited the On-line Game Clinic Center and 38 age and sex matched healthy control subjects were recruited in the study. Structural MR and 1H MRS data were acquired using a 3.0 T Philips Achieva 3.0 Tesla TX MRI scanner (Philips, Eindhoven, the Netherlands) using an 8 channel Sense head coil. All subjects were drug naive on the day of scanning. Voxels were sequentially placed in right frontal cortex and right medial temporal cortex. For assessment of executive function, a computerized version of the WCST (CNT4.0, Maxmedica Inc) was administered to all subjects.
Results
In the right frontal cortex, the levels of NAA in PGA were lower than those in healthy controls ($F=21.8$, $p<0.01$). In the medial temporal cortex, the levels of Cho in PGA participants were lower than those observed in healthy controls ($F=8.52$, $p<0.01$). The Young Internet Addiction Scale (YIAS) scores in PGA were negatively correlated ($r=-0.54$, $p<0.01$) with the level of NAA

in right frontal cortex (Figure 2). Perseverative responses (r=-0.50, p<0.01) and perseverative errors (r=-0.49, p<0.01) on the Wisconsin card sorting test were negatively correlated with the level of NAA in right frontal cortex in the PGA subjects (Figure 2). The Beck Depressive Inventory (BDI) scores in the PGA cohort were negatively correlated with Cho level in the right temporal lobe (r=-0.44, p<0.01).
Discussion
To the best of our knowledge, this is the first MRS study of on-line game addiction. In particular, the subjects with on-line game addiction in the current study were free from psychiatric co-morbidity. Patients with on-line game addiction may share the characteristics with ADHD and MDD in terms of the deficit of frontal and temporal cortices.

**NO. 24**
**AUTOMATED THALAMUS CLASSIFICATION BASED ON BRAIN CONNECTIVITY USING STOCHASTIC TRACTOGRAPHY**
*Lead Author: Taiga Hosokawa, M.D., Ph.D.*
*Co-Author(s): Tom Ballinger, Sylvain Bouix Ph.D., Marek Kubicki Ph.D., Robert W. McCarley M.D., Martha E. Shenton Ph.D., Carl-Fredrik Westin*

**SUMMARY:**
Background: Reliable anatomical definition and stereotactic precision of deep brain nuclei targets are crucial in clinical settings, since many functional diseases such as depression, Parkinson disease, essential tremor and dystonia are neurosurgically treated, including by applying deep brain stimulation to the appropriate functional area. Atlases of deep brain nuclei are mostly derived from post-mortem studies since no imaging technique provides sufficient contrast to identify distinct nuclei in living human. However, individual anatomical differences have made mapping problematic. Especially, the thalamus which all of the sensory pathways project to the cortex through needs precise localization. More importantly, not only histological boundaries, but also connectivity-based localization of the thalamus has been demanded.
Methods: We used diffusion tensor magnetic resonance imaging (DT-MRI) to extract white matter tracts in living human brain to find connectivity between the thalamus and cortical targeted regions. We produced novel stochastic tractography algorithm to overcame the shortcoming of DT-MRI which has been unable to trace pathways into gray matter. We applied this to eighteen healthy subjects and compared DTI indices including mean FA, Trace, axial diffusivity and radial diffusivity within each connection.
Results: This method enabled classification of the thalamus nuclei based on functional connectivity. The segmentation map was consistent with well-known histological atlas. ANOVA with post-hoc Tukey HSD test demonstrated that each connection has distinct profile (p=.000) and it validated this method.
Conclusions: This new automated non-invasive technique provides reliable and fast connectivity-based classification of the thalamus in individuals for better treatments and also free from operators' bias.

**NO. 25**
**DIFFERING DEFAULT MODE NETWORK ACTIVITIES IN MEN WITH HOMOSEXUAL OR HETEROSEXUAL PREFERENCES**
*Lead Author: Shaohua Hu*
*Co-Author(s): Shaohua Hu, Dongrong Xu, Bradley S Peterson, Qidong Wang, Xiaofu He, Jianbo Hu, Ning Wei, Minming Zhang, Xiaojun Xu, Manli Huang, Weihua Zhou, Weijuan Xu, Chanchan Hu, Yi Xu*

**SUMMARY:**
Imaging studies have reported differences in brain structure and function between homosexual and heterosexual men. The neural basis for homosexual orientation, however, is still unknown. This study characterized the association of homosexual preference with measures of fractional amplitude of low-frequency fluctuation (fALFF) and functional connectivity (FC) in the resting state. We collected echo planar magnetic resonance imaging data in 26 healthy homosexual men and 26 age-matched heterosexual men in the resting state. Sexual orientation was evaluated using the Kinsey Scale. We assessed group differences in fALFF and then, taking the identified group differences as seed regions, we compared groups on measures of FC from those seeds. The behavioral significance of the group differences in fALFF and FC were assessed by examining their associations with the Kinsey Scores.
Compared with heterosexual participants, homosexual men showed significantly increased fALFF in the right middle frontal gyrus and right anterior cerebellum, and decreased fALFF in the left postcentral gyrus, left lingual gyrus, right pallidum, right postcentral gyrus, left interior parietal gyrus, right superior temporal gyrus, left cuneus, and left inferior frontal gyrus. In addition, fALFF in the left postcentral gryus and left cuneus correlated positively with Kinsey scale scores in the homesexual partipants. When the seeds in the left cuneus, left cuneus and left superior parietal gyrus also had reduced FC in homosexual compared with heterosexual participants, FC correlated positively with the Kinsey scores. These differences in fALFF and FC suggest that male sexual preference may influence the pattern activity in the default mode network.

**NO. 26**
**ACCEPTANCE-BASED CBT FOR BODY DYSMORPHIC DISORDER: A PILOT STUDY**
*Lead Author: Johanna Linde, M.Sc.*
*Co-Author(s): Jonas Ramnerö, Ph.D., Diana Radu Djurfeldt, M.D., Ph.D.*

**SUMMARY:**
Background
Body dysmorphic disorder (BDD) is a severe, chronic and disabling disorder. Despite BDD's high prevalence and the level of distress caused, research is still sparse in this field. A small body of evidence suggest that cognitive behavioral therapy (CBT) is promising in reducing BDD symptoms. Additional research to determine the effectiveness of other psychological treatments is warranted. To our knowledge, this is the first study to evaluate Acceptance based CBT for BDD.
Method
An open trial where patients (N = 21), in groups of 5-8, received a 12-week treatment consisting of weekly sessions of psychoeducation, exposure with response prevention and acceptance and commitment therapy interventions. The primary outcome was the Yale-Brown Obsessive Compulsive Scale Modified for BDD (BDD-YBOCS), which was assessed by a psychiatrist before and after treatment and at 6-months follow up. Secondary out-

comes were self-rated measures of BDD symptoms, depressive symptoms and general functioning.
Results
BDD symptoms were reduced from M=33,43 SD=4,76 at baseline to M=20,95 SD=7,27 with a large within-group effect size (Cohen's d = 2.07). At post-treatment, 81% of participants had a clinically significant improvement (based on the reliable change index). The treatment also resulted in improvements in self-rated BDD symptoms, depression and general functioning.
Conclusions
Acceptance based CBT reduces BDD symptoms, depressive symptoms and improves general functioning. Randomized trials are needed to confirm the effectiveness of this new treatment.

**NO. 27**

**THE RISK OF SMARTPHONE ADDICTION IN ELEMENTARY SCHOOL CHILDREN**

*Lead Author: Hyewon Baek, M.D.*
*Co-Author(s): Yun-Mi Shin, M.D.*

**SUMMARY:**

Smart devices have brought about groundbreaking societal changes and addictive behaviors related to smartphone use in adults and adolescents have been actively researched. However, smartphone related addictive behavior in children have not gained as much attention. More than 200 children referred to the City of Suwon's Pediatric Mental Health Center in July of 2013 were screened for addictive smartphone behavior and related problematic behavior using the using the Smartphone Addiction Scale (SAS) and the Child Behavior Checklist (CBCL). 103 children ranging from 6 to 12 years old (mean age=8.19, SD=1.794) participated in the study. 39.8% (n=41) of the children owned their own smartphone and a majority were using their smartphone for gaming purposes (68%, n=29). A majority of parents (66%, n=27) were restricting their children's 3G/LTE service during the week and as a result smartphone usage increased in the weekend. Internalization symptoms such as somatization and depression significantly correlated with the total SAS score which was consistent with previous studies on the significant comorbidity between ADHD, depression and internet addiction. Overall, the findings suggest that parents with children presenting with symptoms of somatization and depression must be alert for the risk of smartphone addiction.

**NO. 28**

**INPATIENT STAY, LENGTH OF STAY, AND USE OF TELEPSYCHIATRY IN A CRISES UNIT: PRELIMINARY FINDINGS**

*Lead Author: Mohammed H. Daher, M.D.*
*Co-Author(s): Adaure Akanwa, Alicia Barnes, DO, Andre Pumariega, MD*

**SUMMARY:**

Telepsychiatry is a recognized means of providing access to psychiatric services for underserved areas. However, data on services utilization variables, such as comparative admission rates and length of stay (LOS) between telepsychiatry and face-to-face (FTF) services, are non-existent. We wanted to evaluate the impact of telepsychiatry on these variables and thus performed this study.
Hypothesis: We tested the hypothesis that there is a difference in admission rates and LOS for patients evaluated by telepsychiatry in comparison to FTF.
Setting: Crises unit and associated short-term inpatient psychiatric unit located in Southern New Jersey
Methods: We chose a two-tailed T-test because of the uncertainty of whether the use of telepsychiatry increased or decreases LOS. The experimental group (n=200) is composed of patients evaluated through telepsychiatry physicians. The control group (n=541) is composed of patients evaluated by FTF services by the same physician. The primary outcome variable is LOS. Two-tailed T-test and Chi Square test were used to determine statistical significance between the groups. Secondary outcomes include admission rates and one-month readmission rate.
Results: Patients evaluated by telepsychiatry had significantly lower LOS compared to FTF (6.01 days; n=82) vs. 5.06 days (n=81), t = -2.24, df=158, p=0.027). Percent of admissions were significantly higher for telepsychiatry than FTF (Chi square= 57.84, p = 2.836E-14). (See Table 1 for full results.) T-test also demonstrated showed significant differences in LOS for white race, patients living in private residence, and involuntary status. A higher readmission rate 30 days after initial crises visit for telepsychiatry was found (chi square= 0.67, p= 0.41). There was no difference in LOS for age, gender, black and Latino races, diagnosis, group home and homelessness, medical comorbidity, substance use, and type of insurance
Discussion: Our hypothesis that there were significant differences between evaluating patients by telepsychiatry vs. FTF in a crises unit was supported. This difference could be explained by the fact that the telepsychiatrist spent shorter time in evaluating patients, depend more on screeners and nurse evaluations and thus may practice more defense medicine. The telepsychiatrist thus admit less severely ill patients compared to FTF, so as a result telepsych patients have a shorter LOS. Physicians are evaluating more of the cases that are "on the fence" by FTF, thus explaining the lower admission rate by FTF.
Limitations: Data was not normalized. The study was not randomized. nurses and screeners sometimes selected which patients were "good" for telepsychiatry and which were "good" for FTF.
Conclusion: Evaluating patients by telepsychiatry in a crises unit has an association with shorter length of stay compared to patients evaluated FTF; but, conversely, a significantly higher rate of admissions.

**NO. 29**

**CONSUMER USABILITY TESTING OF A WEB-BASED PATIENT REPORTED OUTCOMES (PROS) AND DECISION SUPPORT TOOL (MYPSYCKES): IMPORTANT LESSONS FOR PROS SYSTEMS**

*Lead Author: Florence LaGamma, M.S.W.*
*Co-Author(s): Elizabeth Austin, M.P.H., Laura Bartkowiak, M.P.H., Molly Finnerty, M.D., Abbey Hoffman, M.S., Edith Kealey, M.S.W., Emily Leckman-Westin, Ph.D., & Krithika Rajagopalan, Ph.D.*

**SUMMARY:**

Background: Integrating patient reported outcomes (PROs) into clinical work is a promising method for promoting more patient centered care. Web-based tools have the capacity to routinely capture PROs, but little data is available on how well individuals with serious mental illness and other vulnerabilities respond to and use these technologies. MyPSYCKES, a bilin-

gual web-based application developed by the New York State Office of Mental Health (NYS OMH), facilitates the use of PROs in the outpatient setting. Before each appointment with the physician, patients use MyPSYCKES to answer questions about their current status and goals. We conducted usability testing of MyPSYCKES among users at three diverse outpatient clinics in New York State. Methods: We recruited subjects from three clinics (one urban, one suburban and one rural) that were currently implementing the MyPSYCKES program to participate in usability testing sessions. During each session, subjects completed a MyPSYCKES CommonGround survey online where they answered 30 structured questions about their use of wellness activities and medications, symptoms and status, concerns about medication, and goals for treatment. The usability testing followed a Think Aloud protocol, asking subjects to speak their thoughts and impressions as they navigated the program. The testing sessions were audio and video recorded, and structured fieldnotes were used to capture subject task completion and feedback. Results: 7 subjects completed the usability testing of MyPSYCKES. 5 subjects were able to complete the MyPSYCKES survey and report without assistance. When given the choice, 2 subjects preferred the touchscreen feature over the mouse, and 1 subject preferred the voiceover feature over reading the text. Clients found all survey questions understandable and useful. Dominant themes from subjects' Think Aloud narrations include: the difference in reporting generic versus individually-relative outcomes, how routine outcome reporting provides insight on progress, and the need to tailor the program over time to individual responses and needs. Discussion: These data from our initial round of usability testing provide important feedback on the value and challenges of electronic patient reported outcomes systems. While our sample was small, most subjects with serious mental illnesses were able to use the web-based program to complete a report of their outcomes independently. The testing garnered important feedback about how to meaningfully collect patient reported outcomes on a routine basis, suggesting that in order for patient reported measures to be effective long-term for patients, they should provide more opportunities for patients to record context and anchor their responses to their individual experiences.

**NO. 30**

**USE OF TELEPSYCHIATRY IN COMMUNITY MENTAL HEALTH SERVICES**

*Lead Author: Yilmaz Yildirim MD*

**SUMMARY:**

OBJECTIVE: The purpose of this study is to compare Telepsychiatry with face to face both for adult and child/adolescent patients for new evaluations and follow ups in community mental health clinic.
METHOD: Between August 2010 and March 2013 mental health services were provided by faculty at East Carolina University, Greenville, NC to patients in a community mental health clinic in New Bern, NC by face to face (FF) or by telepsychiatry (TP). Patients seen between August 2010 and March 2013 were grouped in to TP or FF according to the modality of care they were provided. IBM SSPS Statistics (Version 20) was used for data analysis. Descriptive statistics and T-test was used to analyze the data.
RESULTS: In 107 face to face sessions a total of 1077 patients and in 93 telepsychiatry sessions a total of 890 patients were seen for new evaluations and follow-ups.
In this period the mean number of patients seen per day was 9.79 for TP and 10.40 for FF. There was no significant difference between the average number of patients seen per day between TP and FF modalities. (F=1.98 and p=.16)
The mean number of new evaluation of adult patients per day was 1.06 for TP and .97 for FF. There was no significant difference between the average number of new adult patients seen between TP and FF modalities. (F=.71 and p=.40)
The mean number of adult patients seen for follow up per day was 3.52 for TP and 3.64 for FF. There was no significant difference between the average number of adult patients seen for follow up between TP and FF modalities. (F=.32 and p=.57)
The mean number of new evaluation of child patients per day was .78 for TP and .93 for FF. There was no significant difference between the average number of new child patients seen between TP and FF modalities. (F=.65 and p=.42)
The mean number of child patients seen for follow up per day was 3.52 for TP and 3.64 for FF. There was no significant difference between the average number of child patients seen for follow up between TP and FF modalities. (F=2.04 and p=.15)
CONCLUSION: Lack of psychiatrist has been an important barrier to access mental health services especially in rural areas for both adult and child/adolescent population. TP is a feasible method of providing mental health services both for adult and child/adolescents populations where there is shortage of psychiatrists. In this 32 months study, the results showed that there is no significant difference between utilization of TP and FF psychiatric care. More telepsychiatry programs should be funded to provide mental health services in rural areas where access to mental health services is difficult.

**NO. 31**

**GENDER DIFFERENCES AND MARITAL DISTRESS**

*Lead Author: Saveta Draganic-Gajic*
*Co-Author(s): Milica M. Pejovic-Milovancevic, M.D., Ph.D., Goran M. Gajic, M.D., Dusica Lecic Tosevski, M.D., Ph.D.*

**SUMMARY:**

Objective: There is considerable literature linking personality, individual psychopathology and marital problems, while the issue concerning the exsitance of specific gender differences is still controversial. In this study we analyzed gender-related differences concerning the perception of marital quality and satisfaction during marital distress, as well as the impact of partners' individual psychopathology on marital adjustment. Methods: The study included 90 distressed couples, 45 couples in the process of divorce and 45 couple seeking marital therapy who were self referred to the Department for couples and family during 2013. Personality of the subjects was evaluated using Millon Clinical Multiaxial Inventory (MCMI-III) and the marital adjustment using Dyadic Assessment Scale (DAS). The relationship adjustment of each person was correlated with his/her own self-related personality and partner's self-related personality. Results: The obtained results concerning marital adjustment were significantly lower in both groups of women, comparing their partner's groups, in all dimensions: consensus, satisfaction, affective expression and cohesion. The significant negative correlation was found between men's anxiety and dysthymia and all dimensions of spouse's marital adjustment

scales, as well as with their own marital affective expression. Conclusion: Our results provide support to the hypothesis concerning gender-related differences in marital distress as a reality of couples. The results are discussed in a context of systemic perspective including the role of intrapersonal and interpersonal processes, "partner's effect" in partner's relationship quality and stability, and the importance of specific gender roles in marital relationship.

**NO. 32**

**THE INFLUENCE OF CULTURAL FACTORS ON COUPLES THERAPY DURING THE SOCIAL TRANSITION**

*Lead Author: Sanja Nikolic, M.A., M.D.*
*Co-Author(s): Saveta Draganic Gajic, M.D., Ph.D., Cedo Miljevic, M.D., Ph.D., Cvetana Crnobaric, M.D., M.A.,*
*Olivera Vukovic, M.D., M.A., Dusica Lecic Tosevski,M.D., Ph.D.,*

**SUMMARY:**
Introduction/Hypothesis. During the last decade of the 20th century in Serbia (former Yugoslavia) there were many changes in political, social and economic field, which continue to the present time. As the concept of family is changing so are the dominant family and couples' beliefs and themes that they present in therapy. The aim of this pilot study was to assess the crisis of predominant family beliefs in the transitional society of post-war Serbia and to explore how this crisis influences the presenting themes couples bring to therapy. Methods. The study included twenty couples in distress, self referred to the Department for couples and family during the last six months of 2013. The qualitative analysis of constant comparative method of Grounded Theory was used to analyze the findings. Semi-structured interview and questionnaire assessed the current beliefs of couples regarding the predominant structure and organization of the couple, gender and hierarchical arrangements, power and communication patterns. Couples were interviewed about the level of agreement/disagreement about the beliefs regarding the "traditional" Serbian family as well as about the social context that challenges those beliefs. Results. The obtained results have confirmed our hypothesis that the current changing circumstances of family arrangements influenced by the cultural and society context imposes deconstruction of "traditional" beliefs within the family, while the new ones have not yet been established. Within that framework of leaving behind the old beliefs which are present within the family and accepting the new ones which are imposed by the social context, couples experience difficulties to adjust and often experience crisis. Our findings have shown that therapeutic themes that couples present reflect the social context. Themes that emerged are focused on redistribution of power, economic differences, difficulties in relationships with families of origin and multiple roles. Conclusions/Discussion. Taking into account the obtained results, it is very important that the therapist acknowledges the social context while deconstructing the existing discourses and their influence on the life of the couple. Given that the therapists shared with the couples' similar discrepancy between traditional and transitional beliefs, the risk is that the therapist looses curiosity while working with them.

**NO. 33**

**SIBLINGS OF THE MENTALLY ILL: POSITIVE OUTCOMES AND FAMILY DYNAMICS**

*Lead Author: Avihay Sanders, M.A.*
*Co-Author(s): Kate Szymanski, Ph.D*

**SUMMARY:**
The purpose of this study is to examine the impact of a highly stressful event, having a sibling diagnosed with a mental disorder, on the well siblings. The current study examined whether the well siblings (N = 33) display higher levels of emotional intelligence and posttraumatic growth compared with adequate comparison groups. On the family level, two constructs, quality of attachment with the parents and types of roles played by the well siblings in their family of origin were examined.

Method: Participants completed the Mayer–Salovey–Caruso Emotional Intelligence Test (Mayer, J.D., Salovey, P., Caruso, D.R., 2002. Mayer–Salovey–Caruso Emotional Intelligence Test. MSCEIT: User's Manual. Multi-Health Systems, Inc., Toronto, Ontario), Posttraumatic Growth Inventory (PTGI, Tedeschi & Calhoun, 1996), Inventory of Parent and Peer Attachment (IPPA, Armsden & Greenberg, 1987) and the Role Behavior Inventory (RBI, Verdiano, 1987).

Results: Results show that siblings performed statistically better than the population on Experiential EIQ, the ability to perceive, to respond, and to manipulate emotional input without necessarily understanding it, and statistically worse than the population mean on Strategic EIQ, the ability to understand and manage emotions without necessarily perceiving or fully experiencing them. The group of well-siblings reported higher PTG scores with mostly large effect sizes on most of the inventory subscales. Participants who took an active role in care giving experienced less PTG than participants who did not. Analysis of attachment scores after the diagnosis of their siblings showed statistically significant lower attachment scores with maternal figures compared with scores before the diagnosis. There was no statistically significant change in attachment scores with paternal figures. Findings also suggest that the well siblings score higher on two roles, the Hero and Lost Child, and lower on the Mascot and Scapegoat roles relative to a comparison group (N = 224). A typical profile of a well sibling can be described as an achiever, emotionally sensitive and shy with high personal standards. Being a caregiver emerged as a risk factor to assume certain dysfunctional roles in the family.

Discussion: Mental health professionals should help the family as a whole to deal with the reality of mental illness and assist in restoring positive qualities to the relationship of the well siblings with their parents and siblings, especially considering the fact that so many of them play a pivotal role in caring for their mentally ill siblings. Interventions should address family dynamics as well as unique issues presented by each individual sibling.

**NO. 34**

**THE FREQUENCY AND CLINICAL FEATURES OF THE NIGHT EATING SYNDROME IN PSYCHIATRIC OUTPATIENT POPULATION**

*Lead Author: Nuray Atasoy, M.D.*
*Co-Author(s): ozge saracli M.D., Asena akdemir M.D., Olga guriz M.D., Numan konuk M.D.,*

**SUMMARY:**
Introduction: The prevalence of night eating syndrome (NES) has been reported to be 1–1.5% in the general population, 6–16% in patients in weight reduction programmes and 8–42%

in candidates for bariatric surgery. There have been described several related factors such obesity, gender, medications, presence of psychiatric disorders. There are limited literature that has been studied in depressive disorder, schizophrenia and psychiatric outpatients. In this study we aim to investigate the frequency and clinical correlates of NES in a sample of psychiatric outpatients utilizing both self report and clinical interview based instruments.
Methods: Totaly 1188 patients (777 female, 411 male) were evaluated respectively older than 18 years age in the outpatient clinics of the Departments of Psychiatry by the Faculty of Medicine at Bülent Ecevit University in Turkey. The pregnant women, shift workers and individuals with severe, uncontrolled medical illness were excluded. The study sample was comprised of 433 psychiatric out-patients who meet study criteria. Utilizing the diagnostic criteria proposed by Allison et al., a psychiatrist determined whether or not individuals met criteria for NES. Night eating questionare (NEQ), body shape questionare (BSQ), socio-demographic variables, and body mass ındex (BMI) were also evaluated,
Results: Based on the proposed diagnostic criteria of the NES, 97 (32 male, 65 female) of the sample met full diagnostic criteria for NES. The point prevalence of NES, based on the total group of 433 participants, was 22.4%. The average Night Eating Questionnaire (NEQ) score for the sample was 18.00±7.7 points (out of 52 points). When the patients with NES (n =97) were compared without NES (n=336) with regard to age, gender, marital status, education, height, weight, and BMI; no statistically significant differences were found between two groups. The patients with NES had significantly higher NEQ and BSQ scores than patients without NES ($p<0.0001$). There was positive correlation between NEQ and BSQ total score ($r=0.364$ $p<0.001$). Also there was positive correlation between BMI and BSQ total score ($r=0.302$ $p<0.001$). Depressive disorder and impuls control disorder were reported at higher rates among patients with NES versus without NES ($p<0.001$). Alcohol consumption and nicotine dependency was higher in those with NES (resceptively $p=0.011$, $p=0.004$).
Discussion: Within this population, 22,4% met the criteria for NES. This prevalence is similar to findings by another study (19.8%) from an outpatient psychiatric population in Turkey. It is important to describe risk factors that may affect the development of NES. The degree of BMI was found to be a risk factor for NES. However, NES was not associated with BMI in the psychiatric outpatient group of our study sample. Positive correlation between NES and BSQ shows that body dissatisfaction is an important feature of NES.

**NO. 35**

**LOVE ADDICTION: NEUROBIOLOGICAL AND THERAPEUTIC ASPECTS**

*Lead Author: Vineeth P. John, M.B.A., M.D.*
*Co-Author(s): Marsal Sanches, M.D., Ph.D.*

**SUMMARY:**

Background: Love addiction (LA) can be defined as a pattern of behavior characterized by a maladaptive, pervasive and excessive interest towards one or more romantic partners, resulting in the renunciation of other interests and behaviors. We carried out a literature review on the putative neurobiological mechanisms in LA, as well as on its therapeutic aspects in light of available evidence. Methods: The database PubMed was searched, using the uniterms “love addiction”, “pathological love”, and “behavioral addiction”. In addition, we performed a manual search of bibliographical cross-referencing. Results: Most of the putative neurobiological evidence on the pathophysiology of LA comes has been inferred from basic research assessing individuals undergoing normal romantic experiences. These studies point to the possible involvement of brain reward dopaminergic systems and to attachment-related biological systems in the pathophysiology of LA. Few controlled studies have addressed the efficacy of psychotherapeutic treatments of LA, and virtually no studies have analyzed the potential role of pharmacological agents in the management of this condition. Conclusions: there is an urgent need for a better conceptualization of LA from a nosological and neurobiological perspective. This would be the first step in devising controlled studies aiming at properly assessing the efficacy of different psychosocial and pharmacological interventions in the treatment of this intriguing condition.
Key words: love addiction; impulsivity; addiction; obsessive-compulsive disorder

**NO. 36**

**TARDIVE DYSKINESIA: PSYCHIATRISTS’ KNOWLEDGE AND PRACTICE AND A U.S.-BRITISH COMPARISON**

*Lead Author: Gunjan Khandpur, M.D.*
*Co-Author(s): Joseph Goveas,M.D.,Mara Pheister, M.D.,Suraj P. Singh,M.D.,MRCPsych,M.Sc.*

**SUMMARY:**

AIMS:To establish the current training, practice and beliefs in diagnosing and managing tardive dyskinesias(TD), secondary to antipsychotic treatment and to compare our results to British cohort.
BACKGROUND:Antipsychotics remain the mainstay of treatment of psychosis and other associated disorders. However, along with their benefits they may induce several adverse effects, one of which is Tardive dyskinesia,which reduces the quality of life ,impacts one’s social and occupational functioning and is distressing . Systematic review in the last decade provides an annual incidence of Tardive dyskinesias as 3.9% for Second Generation and 5.3% with First Generation Antipsychotics.
METHODS: The trainees and practicing psychiatrists nationally in the country were surveyed athrough an online questionnaire addressing aspects of diagnosis and management of TD.The data available was collected, analyzed using Fisher’s exact test, the Pearson chi-square test, and the Mantel-Hansel chi-square trend test.
RESULTS:After appropriate IRB approval, a survey link was sent to about 230 individuals nationally with a response rate of 51%. About 88% (n= 104) out of the 118 US respondents reported some training in diagnosing (higher than British) and 78% (n= 92) reported training in managing TD (no different than British). Despite training, US respondents however reported less confidence in diagnosis.The results in management of TD were quite similar to that in diagnosis. Both US and British respondents agreed that there should however be training in both diagnosis and management of TD.Individuals with formal training in management felt more confident in managing it but no difference in diagnosis was seen.

Compared to British cohort, more US individuals fully agreed that psychiatrists should discuss the risk of TD before prescribing antipsychotics and were routinely discussing the risk. A higher proportion also fully agreed that Psychiatrists should monitor for abnormal movements and were routinely monitoring for the outcome of monitoring.
There was a higher percentage (5% vs. 0%) of British respondents who fully disagreed that TD is a cause of litigation. A higher proportion of US respondents (60% vs. 27%) reported being competent in using at least one of the standard rating scales for TD.A higher proportion of Individuals with formal training fully agreed that they would routinely discuss the risk of TD before prescribing an antipsychotic.
CLINICAL IMPLICATIONS:
Appropriate clinical management of psychotic and associated disorders should include careful assessment the antipsychotic prescription and to weigh the potential benefits and associated risks. There is only limited effective treatment available for TD. There is evidence to suggest that ;as psychiatrists we are failing to assess and mange TD effectively.Early and better recognition enhances treatment by improving compliance, preventing misdiagnosis and mistreatment and resulting in a better outcome.

**NO. 37**

**RESEARCH STUDY: THERAPEUTIC DRUG MONITORING OF DIVALPROEX AND CARBAMAZEPINE BY USE OF SALIVA**

*Lead Author: Pankaj Lamba, M.D.*
*Co-Author(s): Fadi Matta, M.D., Naga Kothapalli, M.D., Nabila Farooq, M.D.*

**SUMMARY:**

INTRODUCTION: The mood stabilizers, divalproex sodium, carbamazepine, lithium salts, lamotrigine, have an important role in management of affective disorders. Although dose range are known for these drugs, the relationships among dose, serum concentration, response, and side effects are variable. Therefore, it's recommended that the dose should be titrated upward according to response and side effects. Therapeutic Drug Monitoring (TDM) is a routine clinical practice for titrating the dose and monitoring to reduce toxicity whilst maintaining adequate drug exposure and is established by measuring the levels of Total and Free drug in the plasma/serum (1-3).
Oral fluid sampling (OFS) for quantitative measurement of drugs in saliva could provide a welcome alternative to conventional plasma sampling for TDM. There are many advantage to use OFS given collection is easier, non-invasive, painless and more acceptable to patients who do not like needles. It is believed that drug concentration in the oral fluid may parallel those measured in the blood. Over the last decade due to technological advancement oral fluid collection and analysis has become more reliable and now lower amount of drug can be measured with greater sensitivity. However, for the OFS to be clinically useful, studies need to be performed to determine the level of the drugs in saliva and compare them to actual blood level. To our knowledge, there are only a few studies that have performed concurrent measurement of divalproex and carbamazepine in plasma and saliva and compared the two (4).
METHODS: This is going to be a prospective study. The patient population would include adults who are admitted to inpatient psychiatry at our hospital in 2014 and have been prescribed divalproex sodium or carbamazepine for treatment. The blood tests for TDM are routinely, 3-4 days, after starting the patients' on these medications. Oral samples would be collected from these patients within 10-15 minutes of collection the blood sample. A total of 100 patients would be recruited for the study, 50 for each drug.
RESULTS: The study has been submitted for Institute Review Board of Saint Joseph Mercy Health System for approval. We project the preliminary results would be available in May 2014.
DISCUSSION: We hypothesize the measurement of oral fluid drug level may become an alternate method of determine the TDM for these drugs. This could result in improving the management of patients on these drugs given the inherent advantage of non-invasive collection.
REFRENCES:
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**NO. 38**

**LIFETIME PREVALENCE AND COMORBIDITY OF MOOD AND ANXIETY DISORDERS IN THE ECA FOLLOW-UP STUDY**

*Lead Author: Ruben Miozzo, M.D., M.P.H.*
*Co-Author(s): O. Joseph Bienvenu, MD PHD, Jack Samuels, PHD, William W Eaton, PHD, Gerald Nestadt, MD MPH*

**SUMMARY:**

Introduction: Depressive and Anxiety disorders have been found to be highly comorbid in epidemiologic studies. The presence of the short allele of the serotonin transporter gene (5HTT) has been found to be associated with an increased prevalence of major depressive disorder (MDD), bipolar disorder, anxiety disorders, as well as personality disorders.
Aims: To examine the association of the 5HTT and the prevalence and the risk of comorbidity for, Major Depressive Disorder, Bipolar Disorder, as well as several anxiety disorders in a sample of the Baltimore Epidemiologic Catchment Area Survey (ECA) Follow-up Study.
Methods: Using GLM models, we estimated lifetime prevalence and the risk of comorbidity for Major Depressive Disorder, Bipolar Disorder, Panic Disorder, Agoraphobia, Social Phobia, Obsessive Compulsive Disorder, Generalized Anxiety Disorder, Simple Phobia, Dysthymic Disorder. We added the genetic information to the previous models to assess the impact of the carrier status in the prevalence and comorbidity estimates of the aforementioned disorders. All subjects were evaluated by a psychiatrist using the Schedules for Clinical Assessment in Neuropsychiatry (SCAN)
Results: We found an association of the 5-HTT "s" polymorphism with an increased risk for the lifetime prevalence of Panic Disorder (OR (95% CI): 3.10 (1.33; 7.27)). When we stratified the analysis by sex, this increase was only seen in women carriers (OR (95% CI): 3.54 (1.41; 8.91)). Panic Disorder had significant comorbidities with Alcohol Dependence, Alcohol Abuse, MDD, Bipolar Disorder, Agoraphobia, Social Phobia, OCD, Simple Phobia and Adjustment Disorder. When stratified

by sex, these significant associations were only seen in female carrier subjects. Comorbidities for Simple Phobia were highly significant in males for most anxiety disorders and MDD only when stratified by sex. No statistically significant effect of the "s" allele was found in the comorbidity OR's for MDD, GAD or Social Phobia, while the "s" allele was associated with a decrease in the odds of comorbidity for men affected by Simple Phobia
Conclusions: In our sample, there was a high prevalence of comorbidity amongst most of the anxiety disorders. The effect of the 5HTT carrier status was only associated with an increment in the prevalence of Panic Disorder.

**NO. 39**

**THE STRUCTURED INTERVIEW OF PERSONALITY ORGANIZATION (STIPO): PSYCHOMETRIC PROPERTIES AND CLINICAL USEFULNESS**

*Lead Author: Emanuele Preti, Ph.D.*
*Co-Author(s): Chiara De Panfilis, M.D., Fabio Madeddu, M.D., Antonio Prunas, Ph.D., Chiara Rottoli, M.S.*

**SUMMARY:**
Introduction. The Structured Interview of Personality Organization (STIPO; Stern et al., 2010) allows the assessment of personality organization according to Otto Kernberg's model. We aim at assessing the psychometric properties of the STIPO in an Italian clinical and non clinical sample; we also hypothesize that the STIPO can predict early dropout in a dual diagnosis residential treatment unit.
Methods. In Study 1, 30 university students and people from the community (males 23%; mean age=40.97 ys; SD=±14.35; range: 22-63) and 49 psychiatric patients (males 46.8%; mean age=36.60 ys; SD=±9.45; range: 20-53) were administered the STIPO, the Structured Clinical Interview for Axis II Disorders (SCID II; First et al., 2001), and a set of questionnaires including the Inventory of Personality Organization (IPO; Lenzenweger et al. 2001), the Response Evaluation Measure 71 (REM 71; Steiner et al., 2001), and the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008). In Study 2, 47 patients (males 70%; mean age=35.40 ys; SD=±9.51; range: 18-49) consecutively admitted in a dual diagnosis residential treatment unit were administered the STIPO, the SCID II, and a set of questionnaires including REM 71, Symptom Check List 90 – R (SCL90-R, Derogatis 1977), and the Borderline Personality Disorder Check List (BPDCL, Giesen-Bloo et al., 2005).
Results. Factor-analyses confirmed the 7-factor dimensionality of the STIPO (Identity, Object relations, Defenses, Coping, Aggression, Moral values, and Reality testing). Good Cronbach's alphas (.78-.91) and inter-rater reliability (ICC .82 -.97) emerged. Identity was associated with a stability of self-image and the capacity of pursuing goals. Defenses were associated with measures of primitive defenses, instability of the sense of self and others and of goals, as well as with measures of lack of self-control and emotional instability. Reality testing was associated with psychosis (IPO). The STIPO also showed the expected criterion relations: the three primary dimensions discriminated between clinical and non clinical subjects, whereas only Identity and Defenses discriminate between borderline and non borderline patients. Considering dropout, 51.1% of the patients quit treatment at six months. Significant differences emerged between the dropout and no-dropout group: the Identity subdomains of investment and self-coherence were higher among dropouts; moreover, considering the categorical level of personality organization (borderline vs neurotic), in the dropout group a significantly higher number of patients was assessed as Borderline (88.9%).
Conclusions. The STIPO is a reliable and valid tool for the assessment of personality organization. Identity and overall personality organization also demonstrated to be good predictors of dropout from residential treatment. Implications regarding research and clinical practice, as well as personality disorder diagnosis in DSM 5, are discussed.

**NO. 40**

**AN ALL-DATA APPROACH TO ASSESSING FINANCIAL CAPABILITY IN PEOPLE WITH PSYCHIATRIC DISABILITIES**

*Lead Author: Marc I. Rosen, M.D.*
*Co-Author(s): Christina M. Lazar, MPH, Anne C. Black, PhD*

**SUMMARY:**
OBJECTIVE: The goal of this project was to develop a more effective, reliable, and evidence-based method to assess the ability of disabled persons to manage federal disability payments without a representative payee or other fiduciary. This paper describes the development of the FISCAL (Financial Incapability Structured Clinical Assessment done Longitudinally) measure of financial capability. METHODS: The FISCAL was developed by an iterative process of literature review, pilot testing, and expert consultation. Independent assessors used the FISCAL to rate the financial capability of 118 people who received Social Security disability payments, had recently been in acute care facilities for psychiatric disorders, and who did not have representative payees or conservators. The instrument's psychometric properties, inter-rater reliability, and agreement with other measures were then assessed. RESULTS: Altogether, 48% of participants were determined financially incapable by the FISCAL, of whom 60% were incapable due to unmet basic needs, 91% were incapable due to spending that harmed them (e.g. on illicit drugs or alcohol), 56% were incapable due to both unmet needs and harmful spending, and 5% were incapable due to contextual factors. As expected, incapable individuals had been hospitalized significantly more often for psychological problems ($p<.05$) and scored higher on a measure of money mismanagement ($p<.001$) than capable individuals. Inter-rater reliability for FISCAL capability determinations was good (Kappa=.731) and inter-rater agreement was 89%. CONCLUSIONS: The FISCAL has construct validity as a measure of financial incapability, demonstrated good reliability, and correlated with related measures. It can be used to validate other measures of capability and to help understand how people on limited incomes manage their funds.

**NO. 41**

**THE RELIABILITY OF THE DIAGNOSIS ESTABLISHED USING THE RISK CHECKLIST CRISIS SERVICE**

*Lead Author: Anda FGLM Sabelis, M.D.*
*Co-Author(s): Sanne P.A. Rasing, Berry E.J.M. Penterman, M.D.*

**SUMMARY:**
Introduction
If an unknown patient is registered with the crisis service then his or her mental state must be established as quickly as pos-

sible. As far as we know, little research has been done into the quality of a diagnosis established in crisis situations, such as in the crisis service of the municipal mental health service (GGZ). Robins et al. state that the diagnosis established by a psychiatric emergency service agrees with the initial diagnosis (that was not known during the crisis) in 88% of cases (1). Various studies also suggest that a reliable diagnosis can be established during emergency psychiatric help (2,3). Using the Risk Checklist Crisis Service (Dutch acronym CRC) an estimate can be made of the patient's state prior to the crisis contact (4).
The aim of this study is to investigate whether the CRC is a good instrument to make a reliable estimate of the patient's state.
Method
The study participants were people who had registered with the crisis service and who had not previously received care from the GGZ. After the crisis they were registered for an initial consultation and, if necessary, treatment followed this.
The instrument used was the CRC. The primary aim of the instrument is to systematically investigate the risk of aggression during the forthcoming crisis contact. For the diagnosis we use the DSM-IV classification as stated in the patient's file and obtained during the initial consultation.
Numbers and percentages of the various mental states as registered during the crisis and noted in the file after the initial consultation were determined using descriptive statistics. Pearson's Chi Square test was used to examine whether there was a correlation between the mental state during the crisis and the diagnosis on file.
Results
In the period January 2009 to January 2011, 159 people were registered with the crisis service who up until then had never been under the care of the GGZ. From this group, 129 people gave permission for the data to be used.
Discussion
The results show a strong correlation between the estimation of the mental state and the diagnosis established later. We can therefore cautiously conclude that the CRC is a useful tool for estimating the mental state during the crisis. The conclusion needs to be drawn cautiously as only a limited number of diagnoses are used
in the CRC. Alcohol use/misuse is often present as well and this can influence the crisis situation and the mental state.
Professional practitioners can use the CRC to obtain a good picture of the situation they will be confronted with. On the one hand that helps them to provide the correct help and on the other it enables them to take appropriate measures against aggression.
(1) Robins et al, 1977 (2) Currier & Allen, 2003 (3) Warner & Peabody 1995 (4) Penterman & Nijman, 2009

**NO. 42**

**THE RELATIONSHIP OF ADAPTIVE AND PATHOLOGICAL NARCISSISM TO ATTACHMENT STYLE AND REFLECTIVE FUNCTIONING**

*Lead Author: Petra Vospernik, M.A.*

**SUMMARY:**

This study examined the relationship of adaptive and pathological (grandiose and vulnerable) expressions of narcissism to attachment style and the capacity for reflective functioning (RF). Narcissism serves a relevant personality construct in clinical theory, social psychology and psychiatry but remains inconsistently defined across these disciplines. Theoretical accounts support the notion that attachment difficulties and maladaptive patterns of mentally representing self and others serve as the substrates for narcissistic pathology but are less pronounced in adaptive narcissism. A multiple regression analysis was conducted in a college student sample of 345 participants applying a cross-sectional, survey design. It was hypothesized that pathological narcissism (grandiose or vulnerable) is associated with higher degrees of attachment-related anxiety and avoidance and lower levels of RF than is adaptive narcissism. Results: With respect to external validity, measures of adaptive and pathological narcissism exhibited a differential pattern of correlations to general psychopathology, thereby supporting the notion that distinct constructs crystallize within narcissism's heterogeneity. Multiple regression analysis confirmed the two-component structure of pathological narcissism representing narcissistic grandiosity and narcissistic vulnerability. Narcissistic vulnerability significantly predicted higher levels of attachment anxiety, an effect that remained after controlling for narcissistic grandiosity and adaptive narcissism. In contrast, adaptive narcissism significantly predicted lower levels of attachment anxiety. Contrary to expectation, this effect was not observed for avoidant attachment, i.e. pathological narcissism was not found to be a stronger predictor of avoidant attachment than adaptive narcissism. This study further found that pathological narcissism was not a stronger predictor of poor reflective functioning than was adaptive narcissism. In sum, these findings illustrate how overall psychopathology and attachment anxiety vary across the three narcissistic expressions, thereby weakening narcissism's clinical utility as currently defined in the DSM-5. Theoretical and treatment implications are also reviewed.

**NO. 43**

**DEPRESSIVE DISORDERS AND MEDICAL CONDITIONS AMONG PATIENTS WITH VASCULAR DEMENTIA**

*Lead Author: Ruby C. Castilla-Puentes, D.P.H., M.B.A., M.D.*
*Co-Author(s): Miguel E. Habeych, MD, MPH*

**SUMMARY:**

Objectives: To compare the prevalence of depression and comorbid medical conditions between patients with a diagnosis of Vascular Dementia (VaD) (cases) in comparison with a matched control group of patients without VaD in the National Managed Care Benchmark Database (IHCIS).
Methods: The prevalence of depression and comorbid medical conditions was compared between patients with VaD (defined by ICD-9 codes) and controls using data from the IHCIS, a fully de-identified, HIPAA compliant database made up of more than 35 Managed Care health plans within the US and covering seven census regions. Matched case-control method was used to compare depression and medical comorbidity. Controls were matched to cases by type of health plan and pharmacy benefit on an 18:1 ratio.
Results: Among the 488,091 patients 60 years or older with full year of eligibility, (identified from January 1st to December 31, 2001), there were 725 patients with VaD, and 57.3% were women. A total of 5,715 patients with a diagnosis of Alzheimer's Disease AD (2,947) and unspecified dementia UD (2,768)

were excluded from this analysis. The prevalence of depressive disorders was much higher in the VaD group compared to a random selection of matched non VaD patients 12,880 (44.1% vs 3.5%, p <0.001). VaD patients had more comorbid medical conditions than patients without dementia. In general, VaD patients had more cerebral degeneration [odds ratio (OR)=21.5, 95% CI=7.0-66.1]; parkinson's disease (OR=13.6, 95% CI=4.0-46.1); cerebrovascular diseases (OR =12.6, 95% CI=5.0-31.7); septicemia (OR =6.5, 95% CI=2.7-15.5);hypotension (OR =4.6, 95% CI=2.0-1052); atherosclerosis (OR =4.6, 95% CI=2.6-8.1); injuries (OR =4.0, 95% CI=2.6-6.1); heart failure (OR =2.8, 95% CI=1.6-4.7); lung diseases (OR =2.4, 95% CI=1.6-3.9); COPD (OR =1.8, 95% CI=1.2-2.7); cardiac dysrhythmias(OR =1.7, 95% CI=1.1-2.6); and urinary diseases (OR =1.6, 95% CI=1.1-2.3); compared with the controls.
Conclusions: The present study confirms that depressive disorders and medical comorbidities are complications of VaD and physicians should be alert to the presence of this clinically important diseases in patients with VaD.

**NO. 44**

**ESTIMATING THE PREVALENCE OF BINGE EATING DISORDER IN A COMMUNITY SAMPLE: COMPARING DSM-IV-TR AND DSM-5 CRITERIA**

*Lead Author: Nicole Cossrow*
*Co-Author(s): Leo J. Russo, Ph.D., Eileen E. Ming, M.P.H. Sc.D., Edward A. Witt, Ph.D., Timothy W. Victor, Ph.D., Thomas A. Wadden, Ph.D.*

**SUMMARY:**

Introduction: Binge eating disorder (BED) previously was included in the Diagnostic and Statistical Manual Fourth edition (DSM-IV-TR) as a "diagnosis for further study." BED is now included in the DSM-5 as a specified disorder, with slightly broader criteria than for DSM IV-TR. The criterion for frequency and duration of binge eating was reduced from "at least 2 days a week for 6 months" in DSM-IV-TR to "at least once a week for 3 months" in DSM-5; all other criteria remained the same. Persons who met DSM-IV criteria for BED would, thus, meet DSM-5 criteria. However, persons who previously may have been considered to have subclinical binge eating may now meet full criteria for BED, resulting in an increased prevalence of this disorder. The purpose of the current study was to estimate and compare the prevalence of BED according to DSM-IV-TR and DSM-5 criteria in a general population of US adults, and, among those who met BED criteria, to determine the proportion who reported having been diagnosed with the disorder by a health care professional.
Methods: A representative sample of US adults was recruited through an online panel and responded to an Internet survey (conducted in September and October, 2013) that included questions related to demographics, general health, self-esteem, and diagnosed psychological disorders, as well as questions designed to assess the DSM-IV and DSM-5 criteria for BED.
Results: Among 22,397 respondents, 344 participants (242 women and 102 men) met the DSM-5 criteria for BED in the past 12 months. The 3-month, 12-month and lifetime prevalence estimates, according to DSM-5, projected to the US population were 1.19%, 1.64% and 2.03%, respectively (0.76%, 1.24% and 1.41% for men and 1.60%, 2.00% and 2.61% for women). The 12-month and lifetime projected prevalence estimates, according to DSM-IV-TR, were 1.15% and 1.52%, respectively (0.75% and 0.92% for men and 1.53% and 2.07% for women). The overall 12-month prevalence of BED was 42% higher according to DSM-5 compared to DSM IV-TR criteria (65% higher among men and 31% higher among women). Among the 344 study participants who met criteria for 12-month BED per DSM-5, only 11 (3.2%) had ever been diagnosed with BED by a health care provider.
Discussion: This is one of the first studies to estimate BED's prevalence using DSM-5 criteria and one of the first studies to estimate point (3-month) prevalence of BED. The change from DSM-IV-TR to DSM-5 criteria resulted in an increase in the prevalence of BED, attributable, in part, to the inclusion of a greater proportion of men, as compared with DSM IV-TR criteria. The majority of those meeting DSM-5 criteria for BED had not been diagnosed with the disorder, indicating high unmet need for those with BED. Supported by Shire Development LLC.

**NO. 45**

**TRENDS IN SUICIDE ATTEMPTS AMONG U.S. ADOLESCENTS BY ETHNICITY AND GENDER: POOLED ANALYSES OF THE 1991 TO 2011 YOUTH RISK BEHAVIOR SURVEYS**

*Lead Author: Mariana L. Cots, M.D.*
*Co-Author(s): Erick Messias, M.D., Ph.D.*

**SUMMARY:**

Introduction: suicide is among the top causes of death in the U.S. population and among the top three causes of death among U.S. teens. Risk factors for teen suicide include pre-existing psychiatric disorders, illicit drug use, having had a plan or having made an attempt. There are significant differences across genders and across ethnic groups in suicidality but it is unclear how these trends have evolved over time. Hypothesis: we hypothesize trends in reported suicide attempts by teens vary by gender and ethnicity and over time. Methods: The Youth Risk Behavior Survey (YRBS) is a biannual survey, conducted by the Center for Disease Control and Prevention since 1991, assessing a variety of risky behaviors, including suicide attempts, in a nationally representative sample of U.S. high-school students. We analyzed data from all available surveys with a total pooled sample of 159,769 students – sample size varied from 10,904 to 16,410 per year. Results: teen suicide attempt rate varies significantly across ethnicities and genders (Heterogeneity chi-squared = 1132.01 (d.f. = 65), p<.00001). Since 1991 Hispanic female teens have the highest rate of reported suicide attempt, ranging from 20% (95% C.I. 16.5-26.2) in 1995 to 11.6 (8.6-15.5) in 1991. The 1991-2011 pooled estimates for the different groups were: 14.4% (13-7-15.2) for Hispanic females, 9.5% (8.9-10.2) for African-American females, 8.6% (8.2-9.1) for Caucasian females, 5.9% (5.2-6.6) for African-American males, 5.8% (4.9-5.8) for Hispanic males, and 3.9% (3.6-4.2) for Caucasian males. There was significant variation (p<.05) across time in each gender/ethnicity group except for African-American males (p=.18) and African-American females (p=.69) Conclusions: Since 1991, female Hispanic teens have the highest proportion of reported suicide attempts, followed by African-Americans and Caucasians female teens. Since 1991, male adolescents are less likely to report having had a suicide attempt. Discussion: Policies to reduce suicidal behavior among teens should take in account these heterogeneities across ethnicities and genders.

**NO. 46**

**HOW LONG PSYCHOTIC AND AFFECTIVE DISORDERS REMAIN UNTREATED?**

*Lead Author: Bernardo Dell'Osso, M.D.*
*Co-Author(s): A. Carlo Altamura, M.D., Chiara Arici, M.D., Benatti Beatrice, M.D., Giulia Camuri, M.D., Laura Cremaschi, M.D., Cristina Dobrea, M.D., Lucio Oldani, M.D., M.Carlotta Palazzo, M.D., Gregorio Spagnolin, M.D., Neva Suardi, M.D.*

**SUMMARY:**
INTRODUCTION. Anxiety, depressive, bipolar and schizophrenia spectrum disorders are prevalent and disabling mental disorders, responsible for dramatic consequences and costs for affected patients, caregivers and entire community. In such a scenario, there is a compelling need to identify and characterize untreated patients, quantify and decrease latency to treatment (i.e., duration of untreated illness "DUI"), detect major barriers to seeking and staying in treatment, increase population mental health literacy and, ultimately, implement early intervention programs.
Previous DUI investigation found that, across psychiatric disorders, latency to treatment could be measured in years, with specific differences in relation to diagnoses and relevant consequences in terms of socio-occupational functioning, treatment outcome and long-term course.
METHODS. In order to further investigate factors influencing access and latency to first pharmacotherapy, we recently conducted, through an ad hoc developed questionnaire, a multicentre collaborative study on a sample of 550 consecutive patients, from three catchment areas in north and south of Italy, with DSM diagnoses of schizophrenia-spectrum, mood (i.e., unipolar and bipolar) and anxiety disorders.
RESULTS. Results showed that patients with affective disorders showed later age at onset, age at first diagnosis and treatment, as well as longer DUI compared to schizophrenics (80.5 months in anxiety disorders, 58.6 months in mood disorders and 43.1 months in schizophrenia spectrum disorders; F=3.813, p=0.02). In addition, patients with mood and anxiety disorders had more frequently onset-related stressful events, benzodiazepines as first treatment, and autonomous help seeking, compared with schizophrenics. In terms of first therapist, psychiatrist referral accounted for 43.6% of the cases, progressively decreasing from schizophrenia to mood and anxiety disorders (57.6%, 41.8 and 38.3, respectively). The opposite phenomenon was observed for other non-psychiatrist medical doctors (total sample 44%; 32.6%, 44.5% and 50.4% respectively), whereas psychologist referrals remained constant (total sample 12.4%).
CONCLUSION. Taken as a whole, reported findings confirm the presence of a relevant latency to first pharmacological treatment within the entire sample (5 years, on average), pointing out specific differences, in terms of treatment access and latency, across psychotic and affective patients.

**NO. 47**

**PREVALENCE OF DEPRESSION AND MILD COGNITIVE IMPAIRMENT IN A SPANISH SAMPLE: A POPULATION-BASED SURVEY**

*Lead Author: Josep María Haro, M.D., Ph.D.*
*Co-Author(s): José Luis Ayuso-Mateos, M.D., Ph.D. (10), Félix Caballero, Ph.D. (7), Somnath Chatterji, M.D. (9), Noé Garín, Pharm.D., M.Sc (4), Josep María Haro, M.D., Ph.D. (11*Corresponding author), Ai Koyanagi, M.D., Ph.D. (8), Elvira Lara, M.Sc (2), Marta Miret, Ph.D (6), María Victoria Moneta, M.Sc (5), Beatriz Olaya, Ph.D. (3)*

**SUMMARY:**
BACKGROUND:Population studies have shown diverse results regarding the prevalence of depression in the elderly. While general population studies including all ages tend to find lower prevalence of depression among the elderly, studies with population samples focusing on the elderly have found increasing rates of depression with increasing age. It is not known whether mild cognitive impairment (MCI) and depression coexist.METHODS:The data comes from the COURAGE-Spain project, a cross-sectional survey of a representative sample of the non-institutionalized adult population in Spain. A total of 4583 individuals were interviewed with an overall response rate of 69.9%. Those aged 50+ years were oversampled. Individuals with severe cognitive impairment were not included in these analyses (in these cases a proxy interview was performed for these cases but it did not include the assessment of depression). Depression was assessed with the Composite International Diagnostic Interview (CIDI). Cognition was assessed with five neuropsychological tests from the CERAD battery and Wechsler tests. MCI was defined as having a performance below 1.5 SD of the age and sex stratified mean in more than one cognitive test. The Chi-square test was used to examine the statistical significance between depression and MCI across the variables age and sex groups. RESULTS:Overall, the prevalence of DSM-IV 12-month depression was higher in females than in males (12.2% vs 5.7%, p<0.001). Depression tended to increase until the middle age: prevalence was 7%(18-49 age group), 12%(50-64 age group), 12%(65-79 age group) and 13% (those older than 80+)(p<0.001). The prevalence of MCI also increased with age, with it being 6.2%, 8.6% and 13.6% in individuals aged 50-64, 65-79 and 80+ years of age, respectively (p<0.001), and was higher in females (8.3% vs. 6.2%, p<0.001 ). The overall prevalence of MCI in individuals with depression was 14.5%. There was a gender difference in the prevalence of MCI among those with depression (with males 12.1% vs. females 15.6%, p<0.001). MCI was present in individuals with depression in all age groups. For those 50-64 years old the frequency of MCI was 11.9%, for those 65-79 years old it was 20.8% and for those older than 80 years and older 10.1%.DISCUSSION:The prevalence of depression was higher in individuals older than 50 years compared to their yourger counterparts. Our results are discordant with previous general population surveys from Spain. The higher prevalence of depression may be explained by the high number of risk factors for depression in the elderly (physical co-morbidity, social and financial problems). People with depression showed an increased frequency of MCI when compared to the general population. Women with depression have a higher frequency of MCI than men. Limitations: Those with severe cognitive impairment and the institutionalized were excluded from our analysis. Our definition of MCI was conservative.

**NO. 48**

**TRAJECTORIES OF ANTIPSYCHOTIC RESPONSE IN DRUG-NAIVE SCHIZOPHRENIA PATIENTS: RESULTS FROM THE 6-MONTH ESPASS FOLLOW-UP STUDY**

*Lead Author: Clementine Nordon, M.D., Ph.D.*

*Co-Author(s): Jean-Michel Azorin, M.D., Ph.D., Caroline Barry, Ph.D., Bruno Falissard, M.D., Ph.D., Frederic Rouillon, M.D., Ph.D., Mathieu Urbach, M.D.*

**SUMMARY:**
Objective The aim of the present study was to explore any heterogeneity in the 6-month clinical response in antipsychotic drug-naive schizophrenia patients, and to determine predictors of that outcome.
Method 467 antipsychotic drug-naive schizophrenia patients were included in France nationwide and followed up over 6 months. In order to identify trajectories of clinical response, a latent class growth analysis was performed using the Clinical Global Impression-Severity (CGI-S) scores at baseline, 1, 3 and 6 months. Regression models were used to identify predictors of trajectory membership.
Results Five trajectory groups were identified: a rapid response group (n=45), a gradual response group (n=204), patients remaining mildly ill (n=133), patients remaining very ill (n=23) and a group with unsustained clinical response (n=62). Predictors of the 6-month clinical response were baseline CGI-S score (odds ratio 3.1; 95% confidence interval, 2.1-4.4) and negative symptoms (OR 1.5; 95%CI, 1.2-1.9). The sole predictor of rapid response as compared to gradual response was employment (OR 2.5; 95%CI, 1.2-4.9).
Conclusion Clinical response in schizophrenia patients 6 months after a first-ever antipsychotic drug initiation is heterogeneous. Therapeutic strategies in first episode should take account of symptoms severity and of early clinical response, in order to maximize the chances of recovery.

**NO. 49**

**PREVALENCE AND CORRELATES OF MAJOR DEPRESSIVE DISORDER AND DYSTHYMIA IN AN ELEVEN-YEAR FOLLOW-UP : RESULTS FROM THE FINNISH HEALTH 2011 STUDY**

*Lead Author: Suoma E. Saarni, M.D., Ph.D.*
*Co-Author(s): Niina Markkula, MD, Samuli Saarni, MD, PhD, Sami Pirkola, MD, PhD, Suoma Saarni, MD, PhD, Sebastian Pena, MD, PhD, Satu Viertiö, PhD, Seppo Koskinen MD, PhD, Jaana Suvisaari, MD, PhD, Tommi Härkänen, PhD*

**SUMMARY:**
Introduction: Globally, mental and substance use disorders are the leading cause of years lived with disability, and depressive disorders are the main contributor to this burden. While the prevalence of depressive disorders has been studied extensively, less is known about changes in the prevalence in recent years and only few general population studies assessing changes in the prevalence over time. In the Finnish Health 2000 general population survey the 12-month prevalence of major depressive disorder was 4.9% and of dysthymia 2.5%. This study will report the prevalence and correlates of these disorders in the Health 2011 follow-up study of the same population.
Methods: The Health 2000 Study (www.health2000.fi) was a nationally representative survey of the Finnish population based on a sample of 8028 adults aged 30 years and over. All participants of the Health 2000 alive and living in Finland at year 2011 who had not refused to participate were invited to take part, including the young adults' sample (altogether n=8 135). The 12-month prevalence of psychiatric disorders were assessed with the Composite International Diagnostic Interview, Munich version (M-CIDI). The two-stage cluster sampling was accounted for in all the analyses, and weights were used to adjust for the oversampling of individuals aged 80 years and over. Age- and gender adjusted prevalence and their 95% confidence intervals were estimated using the predictive margins method and logistic regression models.
Results: In 2011, 5.3% of the target population (3.5% of men and 7.0% of women) filled the diagnostic criteria of major depressive disorder (MDD) during the past 12 months. The highest prevalence (7.5%) was found in the age group 30-44 years. The prevalence decreased gradually with age and was the lowest (1.3%) in the oldest age group, 75 years and older. Dysthymia was diagnosed in 2.0% of the participants, being twice as prevalent in women than men. In the fully adjusted model Female gender (OR 2.07), younger age, and being widowed, separated or unmarried (OR 1.44) were associated with a higher risk of MDD. Comparing the findings to those found eleven years ago in the Health 2000 Survey the prevalence of MDD increased slightly in women, and prevalence of dysthymia decreased in both men and women. None of the changes, however, were statistically significant.
Discussion: Our finding of no significant increase in the prevalence rates was in line with earlier literature: other similar studies in the UK and US have found no significant increase in depressive disorders during the 1990s and 2000s, although there was a notable increase in treatment rates. The stability of the prevalence of depressive disorders is of particular general interest in the light of increasing incidence of disability pensioning due to depression and the increase in antidepressant utilization during the last decades. Reasons for this are most likely complex and have to be further studied.

**NO. 50**

**ENFORCING PSYCHIATRY'S ETHICS: CHALLENGES AND SOLUTIONS**

*Lead Author: Philip J. Candilis, M.D.*
*Co-Author(s): Charles Dike, M.D., M.P.H., Donald Meyer, M.D., Wade C. Myers, M.D., Robert Weinstock, M.D.*

**SUMMARY:**
Ethics enforcement in psychiatry occurs at District Branch and APA levels under the guidance of AMA and APA ethics documents. Sub-specialty ethics consequently have no formal role in the enforcement process. This reality challenges practitioners to work according to guidelines that may not be sufficiently relevant, and challenges ethics reviewers to apply frameworks not intended for the sub-specialties. This presentation, offered by practitioners with experience in APA and sub-specialty adjudications, offers an analysis of the theoretical and practical support needed to amend APA Procedures to permit formal consideration of sub-specialty ethics during ethics complaints, and to include sub-specialty practitioners on panels reviewing them. This is the first step toward an integration of two currently conflicting models of ethics enforcement, regulatory and aspirational, that resolves a critical tension between specialty and sub-specialty ethics.

**NO. 51**

**A NATURALISTIC STUDY OF SCREENING FOR EATING DISORDER AMONGST PSYCHIATRIC *PATIENTS***

*Lead Author: Robbie Campbell, M.D.*
*Co-Author(s): Miky Kaushal MD, Megan Johnston Ph.D., Amresh Shrivastava MRCPsych.FRCPC*

**SUMMARY:**
Introduction
Comorbidity of eating disorder and its behavioral traits are common amongst psychiatric patients.
Eating disorder is often missed or misdiagnosed which leads to poorer clinical outcome and low functioning, though it is a treatable condition. Patents with eating disorder also tend to have severe psychopathology which increases risk of suicide, duration of hospitalization and polypharmacy.The present study examines presence of comorbid eating disorder and its behavioral symptoms in adult psychiatric population
Methods
This is an open level cohort study in naturalistic clinical setting. We randomly selected patients between age 25 to 60 and assessed for screening of eating disorder using EAT-26 scale. Psychopathology and suicdality was assessed using BPRS for psychosis HDRS for depression and SISMAP-BS for suicidality. We recruited thirty five patients. Data was analyzed by SPSS
Results
Scores on the three eating disorder subscales ranged as follows: Dieting ranged from 17 to 61 (M = 31.77, SD = 11.52), Bulimia and Food Preoccupation ranged from 6 to 26 (M = 11.91, SD = 4.95), and Oral Control ranged from 7 to 34 (M = 19.11, SD = 6.86). All subscales are highly intercorrelated (r's = .64, .73, .93, p's < .001) are significantly higher in females than in males (all F's (1, 33) > 4.77, p's < .036). Body mass index (BMI) was negatively correlated with all subscales (r's = -.32, -.35, -.76, p's < .05).
Behavioral traits of eating disorder were positively co-related with severity of psychopathology, risk of suicide and psychosocial factors. The breakup of a steady relationship was positively related to levels of bulimia and food preoccupation (F (1, 33) = 7.19, p =.011) and marginally positively related to dieting (F (1, 33) = 3.57, p =.068). Serious difficulties with a spouse or partner was also predictive of bulimia and food preoccupation (F (1, 33) = 4.58, p =.040). Loss of contact with a close friend of relative was marginally positively related to all three subscales (F's (1, 33) > 3.17, p <.084). Experiencing major financial difficulties was also positively related to dieting (F (1, 33) = 3.83, p =.059) and bulimia and food preoccupation (F (1, 33) = 7.96, p =.008).
Conclusions
Our study shows that behavioral traits of eating disorder can be identified. These traits are correlated with severity of illness and suicide risk. Identification of eating disorder is a matter of patient-safety and should be employed in routine clinical practice. These findings need to be re-confirmed on larger sample size.

**NO. 52**

**DISTURBED EATING BEHAVIORS AND EATING DISORDERS AMONG CHILDREN AND ADOLESCENTS DIAGNOSED WITH DIABETES TYPE I**

*Lead Author: Denise Claudino, M.D.*
*Co-Author(s): Mireille Almeida, M.D.; Angélica Claudino, M.D., Ph.D.; Ruth Grigolon, B.A.; Nara Mendes, B.A., M.A; Wagner Ribeiro, PhD.; Angela Spignola, M.D., PhD.*

**SUMMARY:**
Objective: Abnormal eating behaviors are relatively common in children and adolescents diagnosed with type-1 diabetes. Food restriction and excessive preoccupation with weight are often associated with diabetes treatment and play an important role in the etiopathogenesis of eating disorders (ED). The purpose of this study was to assess eating behavior among children and adolescents diagnosed with type-1 diabetes.
Method: 124 patients (54% females and 46% males) between 8 and 16 years old (mean age 13,10 ± 2,4) who attended outpatient pediatric endocrinology clinics were invited and accepted to participate in the research study. Written informed consent was obtained from participants and their parents. Assessment of their eating behaviors and ED diagnosis was performed using the Development and Well-Being Assessment (DAWBA) interview and the Children Eating Disorders Examination (ChEDE). Symptoms related to depression, self-esteem and body image were investigated using the Childhood Depression Inventory (CDI) and the Body Image Questionnaire (BSQ). Anthropometric parameters and glycosylated hemoglobin were measured. Mann-Whitney tests were used to compare continuous measures and Pearson Chi-Square for categorical measures.
Results: The majority (63.7%) of participants were within the normal weight range; however, 63.9% had abnormal glycosylated hemoglobin levels (9.83 ± 2.7). Importantly, 29.7% of participants demonstrated significant symptoms of depression per the CDI (scored ≥16). Student t test was used to compare the male and the female groups: 13% of the female participants demonstrated body dissatisfaction (scores > 110) on the BSQ, which was significantly different from the male group (p = 0.01). Based on the DAWBA interview, 10.5% of female participants met diagnosis for an ED, as opposed to none of the male participants (p = 0.01). In addition, the ChEDE body weight concern subscale scores were different between genders (p = 0.02), although considered within limits found in general population. Furthermore, 32% of the females and 23% of male participants met criteria for Disturbed Eating Behavior (DEB) – described as presence of at least one ED symptom and those presenting DEB showed higher depressive symptoms (45.2%) than those without DEB (21.3%) ( p = 0.02).
Conclusion: Significant eating disturbances are prevalent in this population of children and adolescents diagnosed with type-1 diabetes and ED rates are higher than commonly found in girls. Females have also a higher prevalence of ED and DEB compared to males. A large number of participants have significant depressive symptoms, particularly those with high risk for ED. Our findings suggest a need for screening for ED symptoms in this population, as well as appropriate intervention considering its potential impact in treatment.

**NO. 53**

**BINGE EATING DISORDER PATIENT CHARACTERISTICS AND BARRIERS TO TREATMENT: A QUALITATIVE STUDY**

*Lead Author: Barry K. Herman, M.D.*
*Co-Author(s): Shima Safikhani, M.P.H., David Hengerer, B.A., Norman Atkins Jr., Ph.D., Andy Kim, Pharm.D., Daniel Cassidy, M.B.A., Thomas Babcock, D.O., William R. Lenderking, Ph.D.*

**SUMMARY:**
Introduction: Binge Eating Disorder (BED) is a formal diagnosis in the DSM-5™. A qualitative study was conducted to obtain

information on adult BED patient characteristics and barriers to diagnosis and treatment.
Methods: Pairs of focus groups were conducted in 3 geographically diverse US cities, with 1 session undiagnosed (U) and 1 diagnosed (D) patients. All participants met DSM-5 criteria when screened. Moderated semi-structured focus group discussions using an interview guide were conducted to explore patient experience with BED and its impacts. The protocol was reviewed and approved by an Institutional Review Board. Eligible subjects provided written informed consent, sociodemographic and relevant health history, and completed 5 questionnaires: QIDS-SR, Weight Efficacy Lifestyle Questionnaire-Short Form, Yale Food Addiction Scale, Y-BOCS-Modified for Binge Eating, and Rosenberg Self-Esteem Scale. Transcribed sessions were analyzed using qualitative analysis software, Atlas.ti® 7.1.
Results: 25 subjects (U=14; D=11) were included. Subjects were very severely obese (n=8), severely obese (n=5), obese (n=4), overweight (n=4), or normal weight (n=4), with mean BMI of 37.7 (severely obese). The U group had a higher mean BMI (39.1) than the D group (36.1). Annual household income was ≤$50,000 for 71% of the U group vs 27% of the D group. Post secondary education was reported by 64% of the U group and 91% of the D group. The most commonly reported medical comorbidities were obesity (U=9; D=4), and hypertension (U=6; D=4). The most common psychiatric comorbidities were anxiety (U=5; D=5), depression (U=5; D=5), and ADHD (U=2; D=2). There were no meaningful differences between U and D in the questionnaires.
In D group, 6 became aware of BED through their HCP; 5 became aware on their own. Health issues, eg weight gain (n=5) and high cholesterol (n=1), prompted some D subjects to contact a HCP. In U group, 7 had discussed weight with HCPs, but others reported shame, guilt, and embarrassment as reasons for not seeking treatment or discussing eating behaviors with HCPs. Subjects perceived that HCPs were focused more on physical ailments, were judgmental about weight, and did not distinguish BED from obesity. They reported HCPs rushed through appointments and gave perfunctory weight loss advice without addressing underlying psychological issues. Subjects desired safe, non-judgmental interaction with HCPs.
Conclusions: Socioeconomic factors may impact access to care and diagnosis of BED. Subjects perceived HCPs to have inadequate understanding of BED and often provide insensitive and ineffective communication around eating behaviors. Both U and D subjects have considerable psychopathology and medical comorbidities. Lack of meaningful differences between U and D BED patient characteristics suggests high unmet medical need and underscores the necessity for greater HCP awareness of and sensitivity around the disorder. Supported by Shire Development LLC

**NO. 54**

**RANDOMIZED CONTROLLED SAFETY AND EFFICACY TRIALS OF LISDEXAMFETAMINE DIMESYLATE FOR ADULTS WITH MODERATE TO SEVERE BINGE EATING DISORDER**

*Lead Author: Susan McElroy, M.D.*
*Co-Author(s): M. Celeste Ferreira-Cornwell, PhD., Maria Gasior, MD., PhD., James Hudson, MD, ScD., Jana Radewonuk, MS.*

**SUMMARY:**

Introduction: In binge eating disorder (BED), episodes of excessive eating associated with a sense of loss of control may involve dopaminergic (DA) and noradrenergic (NE) system dysfunction. Lisdexamfetamine dimesylate (LDX), a D-amphetamine prodrug that modulates DA and NE systems, may reduce the frequency of binge eating in BED.
Methods: Two identically designed multicenter, randomized, double-blind, placebo-controlled clinical trials enrolled adults with moderate to severe BED by DSM-IV-TR™ criteria. Participants were assigned randomly 1:1 for optimal dose titration to placebo or LDX (30 mg/d initial to 50 or 70 mg/d final). Final optimized dose was maintained to the end of double-blind phase (week 12 or early termination [ET]) with efficacy and safety evaluations at each visit, follow-up safety evaluation at week 13, and until resolution of any safety issues. Primary efficacy endpoint, change from baseline in binge eating days/week at weeks 11/12, was assessed with mixed-effects models for repeated measures over all postbaseline visits. Key secondary endpoints included dichotomized Clinical Global Impressions-Improvement (CGI-I) 7-point scale ("very much improved"/"much improved" vs "minimally improved" to "very much worse"). Safety assessments included treatment-emergent adverse events (TEAEs), vital signs, and weight. Results presented are based on topline data and further review is ongoing.
Results: Study 1 enrolled 383 participants; study 2 enrolled 390 participants. A safety population (study 1: N=379 [86.5% female]; study 2: N=366 [85.2% female]) and full-analysis population (study 1: N=374; study 2: N=350) were analyzed. In study 1 and study 2, LS mean (SEM) changes from baseline in binge eating days/week at week 11/12 were –2.51 (0.125) and –2.26 (0.137) with placebo and –3.87 (0.124) and –3.92 (0.135) with LDX, respectively (P<0.001 for each). CGI-I scores of 1 or 2 (much/very much improved) at week 12/ET were 47.3% and 42.9% with placebo and 82.1% and 86.2% with LDX in study 1 and study 2, respectively (P<0.001 for each). Reported TEAEs in ≥10% of participants were dry mouth, insomnia, and headache in both studies. Serious TEAEs were reported in 2 (1.1%) placebo participants in each study and in 3 (1.6%) and 1 (0.6%) LDX participants in study 1 and study 2, respectively. Severe TEAEs were seen in 6 (3.2%) placebo participants in each study and 17 (8.9%) and 7 (3.9%) LDX participants in study 1 and study 2, respectively. Mean changes in pulse and blood pressure in both studies were consistent with known effects of LDX. Discontinuations for TEAEs included 5 (2.7%) and 4 (2.2%) placebo participants, and 12 (6.3%) and 7 (3.9%) LDX participants in study 1 and study 2.
Conclusions: LDX at doses of 50 and 70 mg/d appeared superior to placebo in decreasing binge eating days/week compared with baseline and improving CGI-I. Safety results appear generally consistent with known safety profile of LDX. (Sponsored by Shire Development)

**NO. 55**

**SURVEY OF BINGE EATING DISORDER RECOGNITION, DIAGNOSIS, TREATMENT AND REFERRAL IN U.S. PHYSICIAN PRACTICES**

*Lead Author: Dylan Supina, Ph.D.*
*Co-Author(s): Barry K. Herman, M.D, M.M.M., Carla Frye, Pharm.D., Alicia C. Shillington, Ph.D., James Mitchell, M.D.*

**SUMMARY:**

Introduction: Binge eating disorder (BED) is the most prevalent eating disorder (ED), affecting 2-3% of the US population. BED

was formally designated a distinct eating disorder in DSM-5. A previous BED survey indicated > 40% of physicians never assessed binge eating, even in obese patients (Crow, 2004). The current survey of US physicians assesses how BED is diagnosed, treated and referred.
Methods: Psychiatrists, internists, family practitioners, OB/GYN and psychiatrists were randomly selected and recruited from a nationally representative panel. Participants completed an online survey. Excluded were ED trial investigators and physicians-in-training. To assess awareness, respondents were presented 2 case vignettes consistent with DSM-5 defined BED, then asked a series of questions designed to elicit if they would assess for psychiatric conditions including EDs. Those confirming they would screen and who correctly identified BED in clinical vignettes received additional questions about BED diagnosis, treatment and referral patterns.
Results: Of 278 physicians surveyed, 75% were male. Average age was 52 years. Most were board certified (96%) and had practiced > 10 years (87%). 23% were psychiatrists, 27% family practitioners, 31% internists and 19% OB/GYN. 230 (83%) stated they were somewhat likely to screen for an eating disorder after reviewing a vignette of a BED patient consistent with DSM-5 criteria. This increased to 255 (92%) with a second vignette. 206 (74%) correctly identified BED as the ED and continued the survey. Of these, 33% stated that they proactively interview on eating habits for all patients, and 68% for all obese patients. Approximately 10% do not specifically screen eating habits even in the presence of ED symptoms. Fewer than half (n=112) reported using DSM criteria in making a BED diagnosis and 56 (27%) do not recognize BED to be a discreet eating disorder diagnosis. 48% prefer to refer BED patients rather than treating themselves. Physicians were equally likely to refer to psychologists, psychiatrists, eating disorder clinics and nutritionists. When physicians did treat BED, they were fairly uniform in their reported use of first-line dietitian consultation, followed by exercise and behavioral weight control (~50%). Psychiatrists reported higher use of cognitive behavior therapy, traditional psychotherapy and behavioral weight control. Approximately 30% use pharmacologic treatment first-line, and 57% when other first line treatment fails. Most prevalent drug class cited was SSRIs (46%). Goals for treatment include symptom remission, reduction in binge episodes, improvement in obsessions around eating/urges to binge, better functioning, self-image and health-related quality of life.
Conclusions: Although awareness of eating disorders in general is improving understanding of BED as a distinct eating disorder is lacking. Improved screening for and diagnosis of BED is needed. Supported by Sire Development LLC.

**NO. 56**

**IDENTIFYING EATING-DISORDER-PATIENTS AMONG PSYCHIATRIC OUTPATIENT POPULATION: CORRELATES OF CLINICAL PRESENTATIONS**

*Lead Author: Mei-Chih Meg Tseng*
*Co-Author(s): Chin-Hao Chang Ph. D., Hsi-Chung Chen M.D., Ph. D., Kwan-Yu Chen M.D., Shih-Cheng Liao M.D., Ph. D.,*

**SUMMARY:**

Objectives: EDs have been reported to be a hidden morbidity in prior research, and individuals with EDs seek help more often with the presentations of emotional problems than eating/weight problems. This study aimed to investigate the factors associated with clinical presentations of non-eating/weight problems in patients with eating disorders (EDs). Methods: Sequential attendees aged 18-45 without overt psychotic symptoms were invited to participate a two-phase survey for EDs at the psychiatric outpatient clinics in a university hospital. Each participant completed the paper form SCOFF and received an interview blindly using the ED Module of the Structured Clinical Interview for DSM-IV-TR Axis I disorders (SCID). We adopted loosened criteria for ED diagnosis, i.e.: patients were not required to meet the anorexia nervosa criteria for amenorrhea, the frequency and duration criteria of binge-eating and/or compensatory behaviors for bulimia nervosa, and the frequency and duration criteria of binge-eating for binge eating disorder. Patients diagnosed as EDs were invited to receive the Structured Interview for Anorexia and Bulimia and Mini International Neuropsychiatric Interview, and completed several self-administered questionnaires. We also recorded their main reasons to seek for psychiatric help by chart review methods. Clinical and demographic characteristics of both groups (patients presented with eating/weight symptoms vs. patients presented with non-eating/weight symptoms) were compared. Results: A total of 2140 patients (1306 women, 61%) completed both the SCOFF questionnaire screening and the SCID. Of them, 348 patients (295 women) were diagnosed with a current ED with a prevalence rate of 22.6% and 6.4% for women and men, respectively. The top three common reasons seeking for psychiatric help were eating/weight problems (46.8%), emotional problems (42.7%), and sleep disturbances (19.0%). One hundred and ninety-one patients with EDs (166 women, 86.9%) completed the comorbidity general psychopathology, and functional impairment assessments. ED patients with fewer educational years, less severe degree of binge-eating, diagnoses other than anorexia nervosa or bulimia nervosa, more co-occurring psychiatric diagnoses, and more severe degrees of anxiety, depression, impulsivity and functional impairment were more likely to present themselves with non-eating/weight problems at the psychiatric outpatient clinic. There were no statistical differences of the degree of body image concern and body weight between patients with and without presentation of eating problems. Conclusion: ED patients with more co-occurring psychiatric conditions and poorer functioning were less likely to report their eating problems. This hidden morbidity could hinder the management of patients with complex psychopathology if not being identified clinically.

**NO. 57**

**EFFECTS OF VILAZODONE ON DEPRESSION SYMPTOMS: CATEGORY SHIFT ANALYSIS OF MADRS ITEMS FROM A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL**

*Lead Author: Michael E. Thase, M.D.*
*Co-Author(s): Carl Gommoll, M.Sc., Maju Mathews, M.D., Rene Nunez, M.D., Adam Ruth, Ph.D., Xiongwen Tang, Ph.D.*

**SUMMARY:**

Introduction: Vilazodone is a serotonin reuptake inhibitor and 5-HT1A receptor partial agonist FDA-approved for the treatment of major depressive disorder (MDD) in adults. In previous studies, patients with MDD who received vilazodone 40 mg/day had significantly greater overall symptom improvement compared with placebo as measured by Montgomery-Asberg

Depression Rating Scale total score (MADRS). The MADRS comprises 10 items, each scored from 0 to 6, with higher score indicating greater severity. The objective of this analysis was to assess clinically relevant symptom improvement in individual MADRS items by evaluating baseline to end of study (EOS) shifts from more to less severe symptom categories.
Methods: Post hoc analysis of data from adult patients with MDD (placebo, n=206; vilazodone, n=210) who completed an 8-week, randomized double-blind, placebo-controlled, parallel-group study of vilazodone 40 mg/day (NCT01473394). For each MADRS item, two category shifts were used to evaluate the effects of treatment on symptoms: item score ≥2 (mild to severe symptoms) at baseline to <2 (no or minimal symptoms) at EOS; and item score ≥4 (moderate to severe symptoms) at baseline to ≤2 (mild symptoms to no symptoms) at EOS. Odds ratios (OR) vs placebo and P-values for category shifts were analyzed using logistic regression.
Results: Vilazodone patients were significantly more likely than placebo patients to show categorical improvement from ≥2 to <2 on all 10 MADRS items (OR=1.9 to 4.0, P<.01 for all MADRS items). More than half of vilazodone patients with baseline scores >2 had no or minimal symptoms (score <2) at EOS on MADRS items: Apparent Sadness (51% for vilazodone vs 33% for placebo, OR=2.1, P<.001); Reduced Appetite (67% vs 42%, OR=2.9, P<.001); Pessimistic Thoughts (51% vs 35%, OR=1.9, P=.002); and Suicidal Thoughts (86% vs 61%, OR=4.0, P=.004). In patients with greater symptom severity at baseline (item score ≥4), a significantly greater percentage of vilazodone vs placebo patients had mild to no symptoms (score ≤2) after treatment on most MADRS items: Apparent Sadness (72% vs 51%, OR=2.5, P<.001); Reported Sadness (66% vs 50%, OR=2.0, P=.003); Inner Tension (62% vs 44%, OR=2.1, P=.032); Reduced Appetite (81% vs 41%, OR=6.1, P=.001); Concentration Difficulties (60% vs 44%, OR=1.9, P=.010); Lassitude (70% vs 48%, OR=2.5, P<.001); Inability to Feel (64% vs 43%, OR=2.3, P<.001); and Pessimistic Thoughts (65% vs 38%, OR=2.9, P=.007). Due to the low number of patients with moderate or severe Suicidal Thoughts (n=8), OR was not evaluable for this item.
Conclusions: This post hoc analysis of a Phase IV study demonstrates that vilazodone treatment may improve a range of depressive symptoms in adult patients with MDD. Patients who received vilazodone relative to placebo had a significantly greater odds of achieving no/minimal symptoms after 8 weeks of treatment than those who received placebo. This study was funded by Forest Laboratories, Inc.

**NO. 58**

**LURASIDONE TREATMENT FOR BIPOLAR I DEPRESSION: EFFECT ON CORE DEPRESSION SYMPTOMS**

*Lead Author: Michael E. Thase, M.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Hans Kroger, M.P.H., M.S., Antony Loebel, M.D., Joyce Tsai, M.D.*

**SUMMARY:**

Introduction: Lurasidone has demonstrated efficacy in the treatment of bipolar I depression both as monotherapy and when used adjunctively with lithium or valproate, based on improvement in the Montgomery-Asberg Depression Rating Scale total score (MADRS; Loebel et al, Am J Psych 2013). This post-hoc analysis evaluated the antidepressant effect of lurasidone using the 6-item MADRS subscale which has been shown to be a unidimensional or "core" measure of depressive symptoms (Bech et al, Psychopharm (Berlin) 2002;163:20-25).
Methods: Patients with bipolar I depression were randomized to 6 weeks of once-daily, double-blind treatment with lurasidone in a monotherapy study with fixed-flexible doses of 20-60 mg/d and 80-120 mg/d (N=161 and N=162, respectively) or placebo (N=162); and in an adjunctive therapy study with either lithium or valproate (N=179) or placebo (N=161) with flexible doses of lurasidone 20-120 mg/d,. A subgroup with "more severe" depression, as defined by a baseline MADRS total score ≥30, was also examined.
Results: Lurasidone monotherapy resulted in significantly greater Week 6 improvement on the MADRS-6 score for the 20-60 mg and 80-120 dose groups vs. placebo (-10.4 and -10.4 vs. -6.9; P<0.001 for both comparisons). Onset of significant improvement in the MADRS-6 was observed at Week 1 for the higher dose group and at Week 2 for the lower dose group. In the more severe depression subgroup, lurasidone therapy (2 dosage groups combined vs. placebo) was associated with significantly greater Week 6 improvement on the MADRS total score (-17.3 vs. -11.8; P<0.001) and on the MADRS-6 (-11.7 vs. -7.5; P<0.001). Week 6 effect size was greater for the severe (vs. less severe) depression subgroup on the MADRS total score (0.56 vs. 0.44), and the MADRS-6 score (0.62 vs. 0.44). Treatment with adjunctive lurasidone, compared with placebo, was associated with significantly greater Week 6 improvement on the MADRS-6 score (-11.6 vs. -9.1; P=0.003). Onset of significant improvement in the MADRS-6, for lurasidone compared with placebo, was observed at Week 3. In the severe depression subgroup, numerically greater Week 6 improvement was observed on the MADRS total (-17.5 vs. -14.6; P=0.103) and MADRS-6 (-11.7 vs. -9.7; P=0.091). The Week 6 effect size was smaller for the severe vs. moderate group on the MADRS total score (0.25 vs. 0.40) and the MADRS-6 score (0.25 vs. 0.49).
Conclusions: Treatment of bipolar I depression with lurasidone was associated with significant improvement in core depressive symptoms. In patients presenting with severe depression, monotherapy with lurasidone was associated with higher effect sizes, while effect sizes were smaller in severely depressed patients receiving lurasidone adjunctive with lithium or valproate. Lurasidone monotherapy at higher doses was associated with earlier improvement in the MADRS-6.
NCT00868699, NCT00868452
Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 59**

**GENESIGHT PSYCHOTROPIC REDUCES OVERALL MEDICATION COST IN PATIENTS TREATED WITH PSYCHIATRIC MEDICATIONS**

*Lead Author: Josiah Allen, B.A.*
*Co-Author(s): Joseph M. Carhart, M.A., Alexander J. Spivak, B.S., Bryan M. Dechairo, Ph.D*

**SUMMARY:**

Introduction
Mental illness is one of the leading causes of disability, with direct and indirect costs exceeding $300 billion. Direct annual medical costs for treatment-resistant patients are over 70% higher than those for treatment-responsive patients. Pharma-

cogenomic testing has the potential to lower overall cost to the healthcare system, while simultaneously reducing the symptomatic burden of patients.
GeneSight Psychotropic is an integrated, multi-gene treatment decision support tool that has demonstrated improved clinical outcomes in three published prospective clinical trials. A retrospective healthcare utilization study further demonstrated that GeneSight Psychotropic could predict patients with higher treatment costs due to genetically inappropriate medication regimens. The present data expand upon this earlier trial by providing prospective medication cost data in a large, open label quality improvement project.
Methods
The trial was performed in conjunction with Medco Research Institute. Medco members were eligible for the project after switching or adding a new prescription to their first antidepressant or antipsychotic prescription within 90 days. Patients were enrolled after providing a buccal swab for DNA collection, and GeneSight assay results were made available to patients' clinicians within 3 business days of sample receipt. A total of 2,176 patients were enrolled and propensity matched to a control group (n = 10,880) who were similarly eligible for the project, but did not receive GeneSight testing. Pharmacy data were tracked for 180 days prior to, and 365 days following, GeneSight testing. Drug costs were tabulated for the pre-testing and post-testing periods for cases and controls. Adherence and discontinuation rates were also collected for a subset of patients.
Results
Patients who received GeneSight testing had an annual $1035.60 lower medication costs than patients in the control group. This is due to a mean increase of $143.77 in medication costs per member per month in the control group ($p < 0.0001$), compared to a mean increase of $57.47 per member per month in the GeneSight group ($p < 0.0001$), resulting in an $86.30 cost differential per member per month between the two groups. Over the one year period, adherence rates increased by 17.5% in GeneSight patients, compared to a 0.13% reduction in controls. Similarly, discontinuation rates decreased by 12.5% in GeneSight patients, compared to a 0.73% increase among controls. Finally, GeneSight patients' mean time to discontinuation increased by 45.3%, compared to a 12.9% increase among controls.
Conclusions
- Patients who received GeneSight Psychotropic testing have a mean annual $1035.60 reduction in medication costs over a one year period compared to patient who did not receive testing.
- Patients' rates of adherence improve and rates of discontinuation decrease following GeneSight Psychotropic testing, compared to patients who did not receive testing.

**NO. 60**

**GENOMIC IMPRINTING AND UNIPARENTAL DISOMY IN SCHIZOPHRENIA: EFFECTS ON BRAIN DEVELOPMENT AND FUNCTION AND CONSIDERATIONS IN SPECIAL POPULATIONS**

*Lead Author: Zeinab S. Elbaz M.D.*
*Co-Author(s): Co-authors: Adam Y. Ebaz. Colombia University, Manhattan, NY.*

**SUMMARY:**

Introduction: Epigenetic dysregulation of gene activity maybe an important mechanism underlying the association between paternal age and schizophrenia. Altered expression levels of genes within functional networks and differential effects of aging on key biological systems are consistent with neurodevelopmental models of these disorders.
Methods: Intergrating recent research and clinical data on the subject using Pub Med and Medline data base.
Discussion; Impriniting is an epigenetic phenomenon by which the expression of a gene is determined by it's patent of origin. Unipartental disomy (UPD) occurs when a person receives two copies of a gene from one parent and no copies from the other parent. A person with UPD may lack an active copy of essential genes that can lead to loss of function and derailed development. The causal mechanism underlying the well established relationship between advancing paternal age and schizophrenia is hypothesized to involve mutational errors during spermatogenesis that occur with increasing frequency as males age. Unlike females in whom all germ line cell divisions are completed before birth, males have germ line cell divisions throughout their reporoductive period. Males with advancing age have greater chance to produce sperms with mutations. imprinting errors could increase the risk for schizophrenia pathology or indirectly through impriniting errors in genes related to normal functioning of placenta. The neurogenetic disorder Prader-Willi syndrome (PWS), provided supportive evidence for such a model, the loss of the chromosome region 15q11-13, paternal inheritance will lead to PWS. In PWS 5-10% of cases experience schizophrenia-like symptoms. The chromosome region involved in PWS lies adjacent to 15q13=14 which is linked to schizophrenia in many studies. Torkamani et al provided a novel mechanism for the developmental hypothesis that schizophrenia pathogenesis begins early in life and is associated with failue of normal decrease in developmental-related gene expression.
Conclusion: Epigenetic-Neurodevelopmental model offers considerable explanatory power and point to several lines of future research. This view suggests that preventive teatments may be tailored to the evolutionay stage of the disease process in individuals predisposed to the disorder.
References: 1. Byrne M et al. Paternalage and risk of schizophrenia: a case control study, Arch Gen Psych, 2003;60:673-678. 2. El-Saadi, Pedersen et al. Paternal and maternal age as risk factors for psychosis: findings from Denmark, Sweden and Australia, Schizoph res. 2004;67:227-236.

**NO. 61**

**THE DRD2 GENE RS1799732 AND RS1079597 POLYMORPHISMS ARE ASSOCIATED WITH THE TREATMENT RESPONSE OF AMISULPRIDE**

*Lead Author: Jonghun Lee, M.D., Ph.D.*
*Co-Author(s): Seung-Gul Kang,Heon-Jeong Lee,Ik-Seung Chee,Kwanghun Lee*

**SUMMARY:**

Objective: The aim of this study is to evaluate the association between rs1799732 and rs1079597 genetic polymorphisms of DRD2gene and the treatment response of amisulpride.
Methods: After six weeks treatment of amisulpride, 125 schizophrenia patients were interviewed based on the Positive and Negative Syndrome Scale (PANSS) and the Clinical Global Impression-Severity (CGI-S). The genotyping for rs1799732 and rs1079597 was performed using TaqMan single nucleotide

polymorphism (SNP) genotyping assay.
Results: There was significant difference in the improvement of PANSS total score among the rs1799732 genotypes (F=4.21, p=0.017)and there was significant difference in the frequency of allele of rs1079597 between the responders and non-responders based on the negative score of PANSS scale ($\chi 2$=5.16, p=0.023).
Conclusions: To the best of our knowledge, this is the first positive association study between DRD2 gene and the treatment response to amisulpride in Korean schizophrenic patients. A larger scale research on more SNPs of the DRD2 gene will make a progress in the study of pharmacogenetics on the treatment response of the amisulpride.

**NO. 62**

**VITAMIN D DEFICIENCY IN OUTPATIENTS WITH PSYCHIATRIC DISORDERS**

*Lead Author: Cynthia L. Arfken, Ph.D.*
*Co-Author(s): Alireza Amirsadri, M.D., Albert Pizzuti, R.N., Kelly Powell, M.S.W.*

**SUMMARY:**
Hypothesis: Emerging evidence suggests Vitamin D deficiency is linked to cardiovascular disease and other chronic diseases, including depressive symptoms, in community and medical samples. However, little is known about Vitamin D deficiency among people with psychiatric disorders. Additionally, it is not known whether or not their primary care physicians are checking and monitoring Vitamin D levels in these patients as would be expected with quality physical care. In the general population the prevalence of Vitamin D deficiency (<20ng/ml) is 42% with higher prevalence among African Americans. We hypothesized that Vitamin D deficiency would also be high among our patients enrolled in a general adult outpatient psychiatry clinic and that few would have Vitamin D levels monitored by primary care physicians.
Methods: A case series in a general adult outpatient psychiatric clinic with routine collection of primary care physician contact/information and/or blood draw by a clinic nurse for testing Vitamin D levels.
Results: Of the first 48 patients (75% affective disorder, 27.1% psychotic disorder, 68.8% females, 56.3% African American) seen following implementation of the policy, 48% had Vitamin D deficiency (< 20ng/ml) and 73% had Vitamin D insufficient levels (<30ng/ml). For the 27% with optimal levels, 62% received injections / took supplements. Of patients not treated for Vitamin D, those with deficient levels were more likely to be minorities (p=.05) and to have at least one associated chronic physical disease (p=.02). Almost 90% of the sample was not being monitored by a primary care physician for vitamin D level.
Discussion: Most of the psychiatric outpatients seen in our clinic were not receiving Vitamin D testing by their primary care physician even though those with deficiency were more likely to have a chronic physical disease. This gap illustrates the challenges of integrating care. It also illustrates that it is feasible for psychiatry clinics to monitor Vitamin D levels and provide this care for their patients.
Conclusion: To ensure that our patients with psychiatric problems receive quality care, psychiatrists may have to provide additional services. This series illustrates that it is possible to provide these services and that patients are receptive to receiving them.

**NO. 63**

**SUBSTANCE ABUSE SERVICE USE OF YOUTH WITH CONCURRENT DISORDERS**

*Lead Author: Amy Cheung, M.D., M.Sc.*
*Co-Author(s): Heather Bullock, M.Sc., Nicole Kozloff, M.D., Anthony J. Levitt, M.D., Michael Same, B.Eng., B.Sc., Daniel Elliott, B.Sc., B.A., Kathryn Bennett, PhD, Brian Rush, PhD*

**SUMMARY:**
Objective:
Youth with concurrent disorders (co-occurring substance use and mental disorders) have poor access to services and yet have tremendous unmet needs. This study will examine the pattern of use of substance abuse services over time of youth with concurrent disorders (CD) compared to those with substance use disorders alone (SUD).
Methods:
We examined data from the Drug and Alcohol Treatment Information System (DATIS). DATIS currently collects and reports substance abuse and mental health treatment data from over 170 specialized services in Ontario, Canada.
We examined data from youth with concurrent disorders aged 12 to 19 who initiated substance use services in 2005/6 and examined their service use pattern over the next 5 years compared to youth with only substance use problems. We examined the following characteristics of these groups: demographics, substances used, reasons for entry into treatment, length of treatment and reasons for discharge. Descriptive analyses of these groups were conducted. In 2005/6, 3286 youth with CD and 5751 youth with SUD accessed substance abuse services in Ontario.
Results:
Among youth with concurrent disorders, more males (57.0%) accessed services compared to females (43.0%). This gender difference widens numerically when we look at youth with only substance use disorders (males 68.6%, female 31.2%). The most common presenting problem was the use of cannabis (CD 67.5%, SUD 60.1%, z=7, p<0.0001) with alcohol as the second most common problem substance (CD 59.6%, SUD 55.1%, z=4.2, p<0.0001). The third most common problem substance reported was cocaine/crack (CD 39.7%, SUD 28.2%, NS). The majority of youth who accessed treatment did not have any legal issues at the time of entry into treatment (CD 64.6%, SUD 61.4%, z=3, p=0.0025). However, a larger proportion of youth (26.2%) with SUD were mandated to treatment through parole or probation versus 19.2% of youth with CD (z=7.5, p<0.0001). Only 38.5% of CD youth completed the treatment program compared to 44.6% of youth with SUD (z=5.6, p<0.0001). Between 2005 to 2011, 38.2% of CD youth re-entered treatment for substance abuse versus 42.6% of youth with SUD alone (z=4.3,p<0.0001).
Conclusion:
The results demonstrate there are differences between the CD and SUD populations in terms of use of treatment services, legal issues, and rates of re-entry. This is the first examination of these difference in the Ontario health care context and further exploration may help with treatment planning and program development.

**NO. 64**

**USING A WEB-BASED PATIENT REPORTED OUTCOMES TOOL (MYPSYCKES) TO ASSESS MENTAL HEALTH PATIENTS' INTEREST IN ALTERNATIVE THERAPIES AND RELATED CONCERNS**

*Lead Author: Laura T. Bartkowiak, M.P.H.*
*Co-Author(s): Elizabeth Austin, M.P.H., Molly Finnerty, M.D., Abbey Hoffman, M.S., Edith Kealey, M.S.W., Emily Leckman-Westin, Ph.D., & Krithika Rajagopalan, Ph.D.*

**SUMMARY:**
Purpose: As mental health practice continues to anchor itself in patient centered methods of care, it is becoming increasing valuable to understand patients' preferences and perceptions of the mental health treatments they engage in. Recent studies suggest that patients' use of mental health medication is often intermittent, and in parallel, their use of alternative forms of medicine is rising. However little data is available about the extent to which these topics are included in traditional medical dialogues. MyPSYCKES is a web-based shared decision making program that patients use to answer questions about their symptoms, status, and medication concerns before their appointment. Patients are asked about their intention to explore cultural or natural healing methods, or to reduce or stop their medication in favor of other strategies, which we investigated alongside their other medication concerns. Methods: We implemented MyPSYCKES in eight diverse mental health clinics in New York State and extracted response data for each patient's first time use of the program. We then investigated patterns of concern around patients who endorsed an interest in exploring alternative therapies or strategies in comparison with other concerns about taking mental health medications. Results: A total of 963 patients used the MyPSYCKES application. 28.45% (N=274) of patients reported that they were exploring alternative strategies. Upon investigating patients' answers within the question itself, 30.29% explicitly cited exploring natural or cultural healing methods, 21.90% cited an interest in stopping their medication, and 10.95% cited an exploration into only taking medication when they are having a difficult time. Among this subset of patients (N=274), 74.82% also answered that they had concerns about how helpful their medications were. 65.33% had concerns about side effects, and 66.42% were concerned about how their medications were affecting their health. Additionally, 43.80% of patients cited concerning fears, 38.32% of patients cited concerning beliefs, and 44.16% cited trouble finding motivation to take medications in addition to their exploration of alternatives. Conclusions: 28.45% of patients stated that they were exploring alternative strategies to taking their medication. The large majority of these patients were also concerned about the effectiveness of their medications, which validates previous findings that predict use of alternative therapies. While these patients endorsed other medication concerns at a higher rate than the sample overall, they were twice as likely to endorse fears (43.80% vs. 21.60%), conflicting beliefs (38.32% vs. 15.37%), or trouble finding motivation (44.16% vs. 22.64%) as concerns that impacted their use of mental health medication. In order to support strong therapeutic alliances and patient centered care, it will be important for practitioners to understand patients' reasoning and preferences for exploring alternatives.

**NO. 65**

**CHARACTERIZING THE EFFECTS OF A COGNITIVE SUPPORT SYSTEM FOR PSYCHIATRIC CLINICAL COMPREHENSION**

*Lead Author: Venkata Vijaya Kumar Dalai, M.B.B.S., M.P.H.*
*Co-Author(s): Vineeth John, M.D., M.B.A., Dinesh Gottipatti, M.S., Thomas Kannampallil, M.S., Trevor Cohen, MBChB, Ph.D.*

**SUMMARY:**
Abstract: Cognitive studies of clinical experts reveal application of "intermediate constructs", clinically relevant clusters of information, for problem solving. Novice clinicians are less able to recognize these patterns, so a system to augment their comprehension is desirable. In this study, we evaluate a cognitive support system for psychiatric clinical comprehension, using propositional analysis and Latent Semantic Analysis to measure system effects on clinical comprehension. Results indicate the system promotes case interpretation more closely approximating expert emphasis.

**NO. 66**

**HEALTH ECONOMICS COMPARISON OF TMS AND ANTIDEPRESSANT DRUGS IN THE TREATMENT OF MAJOR DEPRESSION**

*Lead Author: Mark A. Demitrack, M.D.*
*Co-Author(s): Dafna Bonneh-Barkay, PhD, David G. Brock, MD, Ziad Nahas, MD, Annie N. Simpson, PhD, Kit N. Simpson, PhD, Angela Waltman,*

**SUMMARY:**
Background: Transcranial magnetic stimulation (TMS) is a safe and effective antidepressant treatment for those unable to benefit from initial antidepressant medication. A recent, large multisite study of acute TMS treatment in clinical practice showed a significant reduction in depression scores at the conclusion of an acute treatment course (Carpenter et al., 2012). In this study, propensity score matching method was used to create a pseudo-randomized comparison between TMS patients and patients enrolled in the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study in order to evaluate the health economic value of both treatments.
Methods: Three hundred and six patients treated with NeuroStar TMS Therapy were matched to STAR*D patients based on their baseline characteristics. Propensity score matching was performed using a greedy algorithm. A logistic regression model was used for constructing propensity scores, and 1:1 matching was achieved in both a forward matching manner and again using a more conservative method of reverse matching, the latter achieved by creating a revised baseline for each of the STAR*D patients using the QIDS-SR value observed from the start of the patient's final level in which they were treated in the STAR*D study. Data from the matched populations were analyzed to estimate the weekly failure and improvement rates. Clinical outcomes were classified into four depression health states based on QIDS-SR score. Cost of medical care and drug utilization as well as outcomes following dropout were estimated for each health state. A Markov model was used to estimate total cost and quality-adjusted life years (QALY) expected for each treatment. The model used a conservative two year time horizon to calculate cost per incremental QALY gained comparing outcomes for TMS versus conventional medications. The model assumed an average of 28.7 TMS treatments during acute phase and 6 treatments during taper phase and at a re-

imbursed cost of $181 per TMS treatment. Patients on medications were assumed to receive a single antidepressant drug for 6 weeks which could then be augmented if remission was not achieved.
Results: TMS provides an Incremental Cost-Effectiveness Ratio of $36,383/QALY which is less than the usually accepted "willingness-to-pay" standard of $50,000. Mean annual costs were estimated at $11,886 and $10,888 for TMS and STAR*D patients, respectively; a difference of $998. The estimated payment per member per month (PMPM) cost was calculated for a moderate-sized payor comprised of 6,000,000 covered lives and assuming a 2% incidence of patients failing to benefit from initial medication, and a utilization of TMS of 15% among these patients. Under these conditions, the PMPM cost increment was $0.25 over two years of treating a patient with TMS compared to drug therapy.
Conclusion: TMS is a cost-effective treatment for patients who fail to benefit from initial antidepressant treatment.

**NO. 67**

**USING A WEB-BASED PATIENT REPORTED OUTCOMES PROGRAM (MYPSYCKES) TO EXAMINE PATIENT SMOKING STATUS AND INTEREST IN CESSATION SUPPORT**

*Lead Author: Abbey Hoffman, M.S.*
*Co-Author(s): Elizabeth Austin, M.P.H., Annalisa Baker, M.P.H., Laura Bartkowiak, M.P.H., Andrew Fair, M.S., Molly Finnerty, M.D., Edith Kealey, M.S.W., Emily Leckman-Westin, Ph.D., Trish Marsik, & Krithika Rajagopalan, Ph.D.*

**SUMMARY:**
Background: Cigarette smoking is more prevalent among individuals with serious mental illness than among the general population, and is a modifiable risk factor for early morbidity and mortality. Psychiatric patients, with proper support and interventions, can realize similar cessation rates to the general population. Growing evidence suggests that patients' self-reported motivation to quit can be an effective entry point for follow-up. In the current study, we examined questions related to smoking status and cessation support preferences in the outpatient setting. Methods: Smoking screening questions were embedded into a web-based patient reported outcomes and decision support tool (MyPSYCKES) that was implemented in twelve outpatient mental health clinics across New York State. A total of 767 patients used the decision support tool. The NYSOMH team reviewed patients' responses to questions concerning patients' stage of motivation for smoking cessation and interest in additional support for quitting smoking, including quit tips, medications, support groups, and peer videos. Results: 38.6% (n=296) of patients indicated that they were current smokers, and of those, 50.9% (n=149) indicated that they were seriously thinking of quitting smoking (22.9% (n=67) within the next 30 days, 28.0% (n=82) within the next 6 months). For the follow-up question about additional supports to quit smoking, 54.8% (n=68) of patients who were thinking of quitting expressed an interest in information and support to quit smoking, while 15.1% (n=19) of smokers who were not thinking of quitting (n=126) were also interested in getting smoking cessation information and support. Among those requesting help (n=87), the most frequently requested support was tips to quit smoking 57.5% (n=50), followed by information about medications to quit smoking 31.0% (n=27), direct support from their clinical team 28.7% (n=25), videos of other peers who have quit smoking 9.2% (n=8), and other supports 14.9% (n=13). Discussion: Among patients' self-reported smoking status, more than a third were active smokers, however a majority expressed an interest in receiving information and help quitting smoking from their mental health clinic. Interestingly, among patients who initially stated they were not interested in quitting, a modest percentage expressed interest in information or support related to smoking cessation. These findings suggest that embedding smoking screening questions into a patient reported outcomes and decision support tool can be an effective way to identify active smokers and provide them with targeted support that is based on their preferences.

**NO. 68**

**THE INTENSIVE WELLNESS PROGRAM: AN INTEGRATED MEDICAL AND BEHAVIORAL HEALTH APPROACH TO HIGH COST PRIMARY CARE PATIENTS**

*Lead Author: Jeffrey M. Levine, M.D.*
*Co-Author(s): Oneira Torres, M.A., Mercedes Nunez de Cruz, CHW, Carla Cruz, B.A., Rachel Mayers, M.A., Rebecca Riemer, B.A., Andreas Evdokas, Ph.D., Sasidhar Gunturu, M.D., Judd Anderman, M.A., M.A., Ali Khadivi, Ph.D.*

**SUMMARY:**
Objective: A relatively small number of patients account for a disproportionate share of healthcare costs. Such patients most often suffer from mental illness, substance abuse, social disarray, and chronic medical conditions. This project was designed to identify, assess, engage, and care for multi-morbid individuals in an inner city primary care center. The major objective was to prevent unnecessary hospitalizations.
Method: Primary care patients with both chronic mental and behavioral health diagnoses and likely to be hospitalized were identified via a risk stratification tool, Patients-at-Risk-of-Rehospitalization (PARR). Patients underwent full biopsychosocial evaluation and were engaged in enhanced, culturally competent, co-located healthcare with health, mental health, case management and social service components for up to one year. In pre/post quasi-experimental design, inpatient, outpatient, and emergency utilization were examined one year before and one year after initiation of the program.
Results: Among 113 patients, mean age was 48(9) years; 55% were female; 42% Spanish speakers; 66% had not completed high school. Over half had a history of bipolar illness, schizophrenia and/or substance abuse. Most frequent medical illnesses were hypertension (70%); diabetes (47%); and asthma (37%). Nearly one-quarter rated their health as "good to excellent" and over 90% were "very confident" in their abilities to manage their illnesses. Mean Montreal Cognitive Assessment score was 20(5), suggesting very significant cognitive deficits in this population. Hospitalizations decreased: 2.1(2.4) vs. 1.6(2.2), $p<.01$; emergency department visits also significantly decreased while outpatient visits increased robustly. Overall, the intervention was calculated to be cost effective with reduction in healthcare costs of $7,000 (19%) per patient per year.
Conclusion: A strategy to identify high risk multi-morbid patients within primary care and then to offer enhanced combined medical, psychiatric, and culturally competent social support appears to be cost effective. Such inner city patients frequently misperceive their health status and have significant

cognitive impairments that may interfere with self-care. Larger studies are needed to confirm these findings.

**NO. 69**

**CORRELATES OF REPEAT ARRESTS/INCARCERATIONS IN ADULT SUBJECTS DIAGNOSED WITH SCHIZOPHRENIA WITH HSTORY OF CRIMINAL JUSTICE SYSTEM (CJS) INVOLVEMENT**

*Lead Author: Lian Mao, Ph.D.*
*Co-Author(s): Larry Alphs, M.D., Ph.D., Carmela Benson, M.S., John Fastenau, M.P.H., R.Ph., H. Lynn Starr, M.D.*

**SUMMARY:**

Background: Schizophrenia requires a long-term and ongoing treatment regimen to promote recovery. Schizophrenia patients are at risk for discontinuity of treatment after a psychiatric hospitalization or release from prison/jail.
Objective: To examine the different correlates of recidivism.
Methods: This was an exploratory analysis of baseline study data from an ongoing, 15-month, randomized, active-controlled, open-label, multicenter US study of paliperidone palmitate compared with oral antipsychotics. A Resource Utilization Questionnaire (RUQ) completed at baseline was used to evaluate demographic, clinical, and healthcare resource use 12 months before and after release from the most recent arrest/incarceration before study entry. Contacts with CJS 12 months before study entry were also collected. A multiple logistic regression was conducted to determine correlates with recidivism, defined as 3 or more arrests/incarcerations during a 12-month period.
Results: A total of 450 subjects were analyzed. Subjects with at least 3 arrests/incarcerations were younger (35.74 y vs 38.48 y), less likely to have medical insurance (38.6% vs 45.0%), and more likely to have a previous psychiatric hospitalization (35.1% vs 21.1%) than those with fewer than 3 arrests/incarcerations. Prior psychiatric diagnosis of bipolar (24.6% vs 20.4%) or schizoaffective (15.8% vs 12.0%) and concurrent diagnosis of substance abuse disorders (38.6% vs 19.6%) were more prevalent in subjects with at least 3 arrests/incarcerations. Results of the multiple logistic regression confirmed that previous psychiatric hospitalization was significantly correlated with repeat arrest/incarceration (P=0.040).

Conclusions: The data suggest that certain subject characteristics may increase risk of multiple arrests/incarcerations; however, medical insurance coverage may provide continuity of care and may reduce arrest/incarceration risks.
Acknowledgement: Matthew Brouillette
Support: Janssen Scientific Affairs, LLC

**NO. 70**

**HEALTHCARE RESOURCE UTILIZATION PRIOR TO FIRST DIAGNOSIS IN PATIENTS WITH NEWLY DIAGNOSED FRAGILE X SYNDROME (FXS): A MULTI-STATE MEDICAID PERSPECTIVE**

*Lead Author: Tara Nazareth, M.P.H.*
*Co-Author(s): Maryna, Marynchenko, M.B.A., Pooja, Chopra, M.S. , Nanxin, Li, Ph.D., Zhou, Zhou, M.S., James, Signorovitch, Ph.D., Eric, Wu, Ph.D., Jessica, Marvel, M.P.H., Saeed, Ahmed, M.D., Rahul, Sasane, Ph.D.*

**SUMMARY:**

INTRODUCTION: Children with FXS often experience delays in receipt of care, due to lack of timely detection, (genetic) testing, and/or diagnosis. FXS symptoms are often present prior to diagnosis and may thereby contribute to the overall burden of disease unnoticed. In order to better understand burden of FXS, the associated impact prior to diagnosis should therefore also be considered. This study assessed healthcare resource use pre-diagnosis in Medicaid populations.
METHODS: Using pooled Medicaid claims data from five states (Florida, New Jersey, Missouri, Iowa, and Kansas from 1997-2012), subjects with ≥2 FXS diagnoses (ICD-9-CM: 759.83) and ≥1 claim for genetic testing (ICD-9-CM: V26.3 or CPT: 83891-2, 83894, 82896-8, 83912) on or preceding the date of first diagnosis were identified as newly diagnosed FXS cases. Cases were matched 1:5 to controls without FXS in their claims history based on age (within 1 year), gender, state and duration of continuous enrollment. Medications, medical procedures, and all-cause healthcare resource use were assessed during the 6 months prior to first FXS diagnosis and during the parallel time period for matched controls. Differences between cases and controls were measured as mean differences (MDs) for continuous variables and odds ratios (ORs) for dichotomous variables.
RESULTS: 145 cases and 725 matched controls (mean age: 9.0 years; 88% < 18 years of age; 77% male) were identified. Significant differences were observed between cases and controls in use of medications including stimulants/other ADHD agents (24% vs. 7%, OR = 4.42, 95% CI = 2.77;7.04), antipsychotics (12% vs. 4%, OR = 3.53, 95% CI = 2.04;6.09), anticonvulsants (11% vs. 4%, OR = 3.33, 95% CI = 1.71;6.50) and antidepressants (10% vs. 4%, OR = 2.98, 95% CI = 1.62;5.50). Cases were more likely to receive medical services including x-rays (41% vs. 12%; OR = 5.10, 95% CI = 3.42;7.60), genetic testing/counseling (30% vs. 1%; OR = 78.52, 95% CI = 27.74;222.32), speech therapy (26% vs. 4%; OR = 9.55, 95% CI = 5.71;15.95), physical therapy (26% vs. 4%; OR = 7.94, 95% CI = 4.93;12.77), and MRIs (14% vs. 1%; OR = 19.17, 95% CI = 7.39;49.74) compared to controls. Cases also had significantly more outpatient visits (MD = 8.73, 95% CI = 6.02;11.44), home service (MD = 3.20, 95% CI = 0.17;6.22), and school service (MD = 1.82, 95% CI = 0.45, 3.19) compared with controls. No significant differences were observed in inpatient visits (MD = 0.04, 95% CI = -0.01;0.08), length of inpatient stay (MD = 1.82, 95% CI = -0.74;4.38) or ER visits (MD = 0.23, 95% CI = -0.02;0.47) between cases and controls.
CONCLUSIONS: Our study demonstrates that even prior to a genetically-confirmed diagnosis, FXS can be associated with significantly increased healthcare resource use in Medicaid populations. The potential for timely and effective detection, diagnosis and treatment to reduce this burden warrants further study.
Supported by Novartis Pharmaceuticals Corporation.

**NO. 71**

**MEDICATION USE, MEDICAL SERVICES AND COMORBIDITIES ASSOCIATED WITH FRAGILE X SYNDROME (FXS): A MULTI-STATE MEDICAID PERSPECTIVE**

*Lead Author: Tara Nazareth, M.P.H.*
*Co-Author(s): Maryna, Marynchenko, M.B.A., Pooja, Chopra, M.S. , Nanxin, Li, Ph.D., Zhou, Zhou, M.S., James, Signorovitch, Ph.D., Eric, Wu, Ph.D., Jessica, Marvel, M.P.H., Saeed, Ahmed, M.D., Rahul, Sasane, Ph.D.*

**SUMMARY:**
INTRODUCTION: FXS, the most common inherited intellectual disability, imposes considerable clinical, economic and psychosocial burden on patients and on the healthcare system. This study quantified the burden of illness due to incremental health care resource use and comorbidities associated with FXS in a Medicaid population.
METHODS: Using pooled Medicaid claims data from five states (Florida, New Jersey, Missouri, Iowa, and Kansas from 1997-2012), subjects with ≥2 FXS diagnoses (ICD-9-CM: 759.83) on different dates and ≥6 months of continuous enrollment prior to the first observed FXS diagnosis claim (index date) were matched 1:5 to controls without FXS in their claims history on age (± 1 year), gender, state and duration of continuous enrollment. Medication use, medical procedures and comorbidities were compared between cases and controls using odds ratios (ORs) over a 6-month period prior to the index date using regression models accounting for the covariance between cases and the 5 controls to get a robust estimation of the standard errors.
RESULTS: 697 subjects with FXS and 3,485 non-FXS matched controls (mean age: 18.3 years; 61% < 18 years of age; 82% male) were identified. Significant differences were observed between FXS cases versus FXS-free controls in the use of medications including antipsychotics (21% vs. 8%, OR = 3.24, 95% confidence interval [CI] = 2.60, 4.03), stimulants/other ADHD agents (21% vs. 6%, OR = 4.02, 95% CI = 3.22, 5.01), anticonvulsants (19% vs. 7%, OR = 3.07; 95% CI = 2.41, 3.91), antidepressants (14% vs. 8%, OR = 1.80; 95% CI = 1.42, 2.29) and anxiolytics (8% vs. 5%, OR = 1.90; 95% CI = 1.39, 2.60). Significant differences in medical service claims included those for x-rays (24% vs. 13%; OR = 2.15; 95% CI = 1.76, 2.64), physical therapy (22% vs. 5%; OR = 5.34; 95% CI = 4.21, 6.77), speech therapy (16% vs. 3%; OR = 6.69; 95% CI = 5.12, 8.74), gastrointestinal testing (13% vs. 8%; OR = 1.71, 95% CI = 1.33, 2.19) and genetic testing/counseling (8% vs. 0%; OR = 49.67, 95% CI = 21.52, 114.64) for FXS cases compared to FXS-free controls. The most prevalent comorbid conditions associated with FXS included ADHD (11% vs. 4%; OR = 3.17; 95% CI = 2.37, 4.25), autism (14% vs. 1%; OR = 15.61; 95% CI = 10.69, 22.80), otitis and eustachian tube disorders (17% vs. 8%; OR = 2.52; 95% CI = 2.05, 3.10), learning disability/developmental delay (34% vs. 5%; OR = 10.77; 95% CI = 8.82,13.16) and seizure disorders (12% vs. 3%; OR = 4.72; 95% CI = 3.45,6.44).
CONCLUSIONS: In Medicaid populations, FXS is associated with significantly increased use of medications and medical services and an increased comorbidity burden. The potential for more effective, tailored treatments of FXS to reduce these dimensions of the disease burden warrant further evaluation.
Supported by Novartis Pharmaceuticals Corporation.

**NO. 72**
**CONSUMER FOCUS GROUPS TO IMPROVE METABOLIC SCREENING AND TREATMENT OF RACIAL/ETHNIC MINORITIES WITH SEVERE MENTAL ILLNESS IN SAN FRANCISCO COUNTY**
*Lead Author: Lindsey G. Williams, B.S.*
*Co-Author(s): Dean Schillinger, M.D., John Newcomer, M.D., Pat Arean, Ph.D., Christina Mangurian, M.D.*

**SUMMARY:**
Background:
People with severe mental illnesses (SMI) are at significantly high risk of developing the metabolic syndrome. Despite attempts to encourage psychiatrists to begin metabolic monitoring for people taking antipsychotics-many of which increase metabolic risk-screening rates remain low. This is concerning, particularly for members of minority groups already at high risk for metabolic abnormalities.
Objective:
To collect input from consumers with severe mental illness on where they would like to receive screening and treatment of metabolic abnormalities.
Methods:
Focus group participants were recruited from two San Francisco County clinics serving people with SMI. Two focus groups of 8-10 participants were convened, one focusing on African American consumers and the other on Latino consumers. All participants signed a consent form and received a $20 gift card. A semi-structured interview guide was used focusing on barriers to screening and tailoring a proposed metabolic screening intervention. The 90-minute sessions were digitally audio-recorded. Recordings and transcripts were used to summarize the focus group data. An "overview grid" was used to identify patterns in responses and characterize the frequency, extensiveness, intensity, and consistency of responses.
Results:
Although the final report is pending, it will summarize views from this vulnerable population about barriers to screening and ways to tailor a proposed intervention to improve metabolic screening.
Conclusions:
To our knowledge, no prior studies have examined SMI consumer preferences regarding receipt of medical care for antipsychotic-induced metabolic screening. Engaging consumers is critical for the development of patient-centered interventions. Here we present our findings of the consumer view-point to improve metabolic screening and treatment of metabolic abnormalities in people with SMI. These consumer focus groups provide invaluable information to tailor an intervention to improve metabolic screening in this vulnerable population.
This research was supported by NIMH K23MH093689.

**NO. 73**
**THE CLINICAL DENIAL/DIAGNOSTIC AVERSION HYPOTHESIS: SUBLIMINAL MIND-BODY DYNAMICS ASSOCIATED WITH HIGH PAIN AND SYMPTOM THRESHOLDS THAT MASK DISEASE**
*Lead Author: Roland A. Carlstedt, Ph.D.*

**SUMMARY:**
Not everyone who experiences symptoms or psychological distress voluntarily seeks treatment. Some individuals, rarely, if ever, admit to feeling pain or stress even in the presence of objective evidence to the contrary. This subset of people are unlikely to schedule with physicians even though doing so could help avert major health problems. Such avoidance marks an under-recognized/unclassified clinical phenomenon that can be referred to as Diagnostic Aversion (DA) or Clinical Denial (CD), behaviors. They usually first come to light only after "forced" hospitalization that results from collapse or severe disability associated with late-stage disease (especially in cardiologic, neurologic or oncologic contexts). DA/CD is hypothesized to be a major risk factor for experiencing an acute, severe medical

incident that can be attributed to unrecognized or ignored treatable sub-clinical pain or symptoms evolving into a disease, because a patient presents too late. Physicians may be skeptical of patients who first present with late stage disease yet claim to never have experienced pain and symptoms that tend to be pervasive in the presence of advancing disease. However, DA/CD is hypothesized to be a distinct, subliminal, cognitive and behavioral, avoidant response disorder that is mediated by a triad of psychological measures: hypnotic susceptibility (HS), neuroticism (N) and repressive coping (RC). These traits and behaviors have been shown to interact to potentiate or dampen individual perceptions of symptoms and pain depending on their level and constellation. People who have high levels of RC and low levels of HS tend to ignore symptoms, have high pain thresholds and rarely experience psychological distress. By contrast, patients who are high in HS and N and low in RC are hypersensitive to bodily sensations, experience high levels of mental stress and are more likely to be hypochondriacs. The lack of pain sensitivity and symptom awareness associated with high RC/low HS can have insidious consequences including chronic vasoconstriction and immunosuppression, mind-body responses that may hasten the development of disease. These "secrets that are kept from the mind but not the body and underlying physiology," initially, help maintain a self-perceived state of psychological well-being until it is too late, when pain and symptoms can no longer be endured, due to massive underlying pathology, whose effects the mind can no longer mask. It is therefore important that high RC/low HS people are identified preemptively and made aware of potential psychological tendencies associated with these traits that may impact their future health trajectories. Since they are unlikely to voluntarily present in healthcare settings these measures should be routinely assessed as part of mandatory health screenings and in patients without a documented medical history who present with critical symptoms (after stabilization).
quote: Wickramasekera (1988)

**NO. 74**

**BASELINE PHQ-9 SCORE AND COLLABORATIVE CARE PREDICT REMISSION AMONG MINORITY PATIENTS WITH DEPRESSION**

*Lead Author: Ramona S. DeJesus, M.D.*
*Co-Author(s): Stephen S. Cha, M.S.*

**SUMMARY:**
The collaborative care model (CCM) has been shown to effectively manage depression across various ethnic groups and may ameliorate care disparity (1, 2). We instituted the model across primary care sites at our institution in March, 2008.
We compared 26 and 52 week treatment outcomes among minority patients enrolled under CCM to usual care (UC) and identified variables that predict remission. Using the registry, de-identified data of minority patients defined as non-Caucasian individuals who meet criteria for CCM enrollment (=/>18 years with PHQ-9 score of =/>10) from March 2008 until December 2012 were reviewed. Initial, 26 and 52 weeks PHQ-9 scores were tracked to evaluate response (defined as 50% reduction in score from baseline) and remission (PHQ-9 score of =/<5) rates.
Of 193 minority patients with depression, 73% were female. Majority enrolled in CCM (n=154). Initial mean PHQ-9 score did not differ between the 2 groups. At 26 weeks, those under CCM had significantly higher response and remission rates compared to usual care (p-value: <0.001). This observation persisted at 52 weeks. Using multiple variance analysis, enrollment in CCM and higher baseline PHQ-9 score both independently predict remission at 52 weeks; those with higher baseline score are less likely to sustain remission (p-value: 0.03)
Conclusion: Among minority patients with depression, enrollment in CCM and higher baseline PHQ-9 score independently predict remission. CCM effectively achieved and sustained remission compared to usual care.
Adaptation of this model across various population groups should be considered.
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**NO. 75**

**ASSOCIATION BETWEEN COGNITIVE SUBDOMAINS AND EXTRAPYRAMIDAL SIGNS IN MILD COGNITIVE IMPAIRMENT AND ALZHEIMER'S DISEASE**

*Lead Author: Jin Hong Park, M.D.*
*Co-Author(s): Woojae Myung, M.D., Junbae Choi, M.D., Jae Won Chung, M.D., Hyo Shin Kang, M.A., Duk L. Na, M.D., Ph.D., Seong Yoon Kim, M.D., Ph.D., Jae-Hong Lee, M.D., Ph.D., Seol-Heui Han, M.D., Ph.D., Seong Hye Choi, M.D., Ph.D., SangYun Kim, M.D., Ph.D., Bernard J. Carroll, M.B.B.S., Ph.D., F.R.C.Psych. and Doh Kwan Kim, M.D., Ph.D.*

**SUMMARY:**
Objectives : We aimed to investigate the prevalence of Extrapyramidal signs (EPS) and the associations between EPS and cognitive subdomains in patients with Mild cognitive impairment (MCI) or Alzheimer disease (AD).
Methods : We recruited 1,411 patients with MCI and 1,198 patients with AD from the Clinical Research of Dementia of South Korea (CREDOS), a hospital based cohort study with fifty-six participating hospitals. We estimated cognitive subdomain using the Seoul Neuropsychological Screening Battery-Dementia version (SNSB-D). Dementia severity was measured by Clinical Dementia Rating Sum of Boxes (CDR- SB) and Korean version of Mini-Mental Status Examination (K-MMSE). The EPS group was defined by the presence of at least one EPS based on a focused neurologic examination.
Results : The prevalence of patients with EPS was 4% in MCI and 6% in AD, respectively. These had higher CDR-SB scores than non-EPS group. After controlling for demographic, radiological, and dementia severity (CDR-SB) factors, the MCI with EPS group showed lower cognitive ability in the subdomains for frontal-executive function than non-EPS group. The AD with EPS group showed lower cognitive ability in the subdomains for visuospatial and frontal-executive function than non-EPS group. The AD patients with EPS were showed significantly higher scores in the subdomain for memory function.
Conclusion : The presence of EPSs in patients with MCI was associated with lower frontal-executive function. The presence of EPSs in patients with AD was associated with lower visuospa-

tial, frontal-executive function and higher memory function.

**NO. 76**

**EFFICACY AND SAFETY LONG-TERM TREATMENT WITH GALANTAMINE IN MILD COGNITIVE IMPAIRMENT**

*Lead Author: Luisa Schmidt, M.D.*
*Co-Author(s): Julio C. Zarra, M.D.*

**SUMMARY:**

INTRODUCTION: To evaluate the efficacy, safety and tolerability of galantamine in long-term in Mild Cognitive Impairment. So there is a possible benefit in the deficit in executive and cognitive cerebral function (cholinergic system) with treatment with Galantamine.

METHODS: a multicenter, open label , prospective, observational study enrolled 1128 patients, more 55 years old with Mild Neurocognitive Disorder (DSM IV criteria), during 36 months of treatment with galantamine 16 mg./day. (Extended release capsules: 16 mg.)

Assessments included the MMSE, CDR, ADAS-GOG, Trail making test, Raven Test, GO-NO-GO test, FAQ, Global Deterioration Scale, GCI and UKU scale of adverse effects.

RESULTS: a total 1128 outpatients were treated with 16 mg. / day galantamine during 36 months, the therapeutic response evaluated with CDR, MMSE and the tests and scales of function cognitive measuring, GCI and UKU scale of adverse effects, comparing the baseline to final scores.

CONCLUSIÓN: Mild Cognitive Disorder is being examined, so there isn't enought treatment for this. A long-term treatment (36 months) galantamine improves cognition and global function, behavioural symptoms and the general state well being of patients with Mild Cognitive Disorder. With incidence of adverse effects not significant and a very good profile of safety, the final results of the study suggest that galantamine may be particularly appropiate in the Mild Cognitive Disorder.

HYPOTHESIS: galantamine is a reversible, competitive cholinesterase inhibitor that also allosterically modulates nicotine acetylcholine receptors. Cholinesterase inhibitors inhibit (block) the action of acetylcholinesterase, the enzyme responsible for the destruction of acetylcholine. Acetylcholine is one of several neurotransmitters in the brain, chemicals that nerve cells use to communicate with one another. Reduced levels of acetylcholine in the brain are believed to be responsible for some of the symptoms of Alzheimer's disease. By blocking the enzyme that destroys acetylcholine, galantamine increases the concentration of acetylcholine in the brain, and this increase is believed to be responsible for the improvement in thinking seen with galantamine.

DISCUSSION: We can recognize the Mild Cognitive Disorder as a clue which reveal a first therapeutic instance probably in efficacy in this cruel evolution towards dementia.

**NO. 77**

**VISUAL ANOSOGNOSIA OBSERVED IN AN ACUTE METHANOL-INTOXICATED BLIND PATIENT, A CASE REPORT AND REVIEW OF ANTON SYNDROME**

*Lead Author: Ye-Ming J. Sun, M.D., Ph.D.*
*Co-Author(s): Liren Li, M.D.*

**SUMMARY:**

Introduction: Anton Syndrome (AS) was first described by Gabriel Anton, a German neuropsychiatrist as a form of anosognosia in which a person with partial or total blindness denies being visually impaired, despite medical evidence to the contrary. AS was mostly reported in bilateral cortically damaged (usually from stroke) and believed to be specifically related to the visual association area of the cortex. However, there have been recent cases reported in which AS phenomenom had been observed in patients with pathological changes along the visual pathway. Here we observed a patient presenting with AS symptoms with retinal damage by methanol consumption.

Case: Mr. R is a 42-year-old male with no prior history of mental illness who presented to the hospital 2 days after ingesting one and half bottles of rubbing alcohol. Patient was brought to the ER unconscious. Lab tests revealed metabolic acidosis. His blood methanol level was 85 mg/dl, alcohol and isopropanol were undetectable. Patient was initially admitted to MICU. He was intubated and treated with hemodialysis. He was transferred to the psychiatric floor after being medically stabilized. General physical exam: no abnormal findings except vision problem. Ophthalmology consultation found 20/400 vision in both eyes. CT and MRI of head showed symmetric attenuation in the white matter of the anterior frontal lobes and both external capsules. On psychiatric interview, patient reported feeling sad but not very depressed. He admitted suicidal attempt in response to being upset with his wife. He admitted occasional cocaine use but no other recreational substance or alcohol use. On MSE, patient presented significant "visual hallucinations". He insisted that he could see the interviewer and the environment clearly. He described in detail what he saw. He denied having ever seen the interviewer in the past. However, patient failed to read words of 36-point size font. The patient was offered haloperidol 3 mg p.o. bid. The patient's "visual hallucinations" were resolved.

Discussion: Anton Syndrome is a visual anosognosia. It has been recognized as a phenomenom mostly in patients with posterior cerebral artery stroke. However, recently there have been reports of AS in patients with optic pathway injuries. It is known that methanol intoxication mainly affects the retina as well as brain structures other than the occipital cortex. Thus, this case endorses the idea that damage to the visual pathway can cause AS-like anosognosia. The response of this anosognosia to antipsychotic medication provides a solution in treating these symptoms. The findings reported in this and other case reports suggests that the mechanism of Anton Syndrome needs further exploration.

**NO. 78**

**NOVEL DRUG TARGETS FOR COGNITIVE IMPAIRMENT: A GENETIC AND MOLECULAR INVESTIGATION OF A DROSOPHILA MODEL OF NF1**

*Lead Author: Steven Sust, M.D.*
*Co-Author(s): Brian P. Schoenfeld, Catherine H. Choi, Aaron J. Bell, Joseph Hinchey, Richard J. Choi, Paul Hinchey, Maria Kollaros, Neal J. Ferrick, Allison M. Terlizzi, Steven J. Siegel, Thomas V. McDonald, Thomas A. Jongens, Sean M. J. McBride*

**SUMMARY:**

Neurofibromatosis type 1 (NF1) affects 1 in 4,000 individuals, has cognitive and behavioral impairments with 4-8 % of patients having intellectual disability, 40-65% having learning disability and 4-25% fitting into the catergory of autism spectrum

disorder. ADHD and sleep disturbances are also often found in the majority of NF1 patients. The human patients are heterozygous for loss of function (LOF) mutations in the neurofibromin gene, which contains a GTPase activating protein domain that inhibits RAS activity. We therefore created a fly model that is heterozygous for a LOF mutation to closely recapitulate the genetics of the human disease. We have characterized this model with regard to learning during training (LDT), immediate recall memory (IR, 0-2 minutes post training), short term memory (STM, 60 minutes post training) and long term memory (LTM, 4 days post training). We have found impairments in cognition including the IR, STM and LTM phases of memory. We additionally found a genetic interaction with dfmr1, the ortholog of FMR1 which is the gene mutation responsible for Fragile X syndrome. The fly and mouse models of Fragile X both have impairments in cAMP signaling, as the mouse model of NF1 has also been demonstrated to have and we therefore targeted the cAMP signaling cascade in an attempt to identify drug targets that may restore cognition in our NF1 model. We have found that we can rescue cognitive impairments with three distinct classes of drugs that can increase cAMP activity after synaptic stimulation in the fly model. Using treatments with mGluR antagonists, lithium or PDE-4 inhibitors given in development or adulthood rescued short term and long term memory impairments in the NF1 fly model. This work identifies three new class of drugs that may be beneficial in the treatment of cognitive impairments in NF1, which can be tested in the mouse model of NF1 with the goal being that efficacy in the mouse model could provide an impetus for testing on afflicted patients.

**NO. 79**

**THE IMPACT OF EDUCATION IN THE RECOGNITION OF BASIC FACIAL EXPRESSIONS**

*Lead Author: Flávia L. Osório*
*Co-Author(s): Larissa F. Santos; Mariana F. Donadon; Lígia M. Pallini; Kátia C. Arrais*

**SUMMARY:**
Facial expressions are visible manifestations of affective states, of cognitive activity, and of one's intentions and personality, and play a communication role in interpersonal relations. Facial emotion recognition (FER) is especially important for the success of social interactions. Many studies have demonstrated the negative impact of cognitive deficits and mental retardation on FER, but only one study to date investigated the influence of education on FER, showing that differences in response patterns across genders are smaller when education is higher. Therefore, we assessed the influence of education on FER in adult subjects with no previous cognitive deficits. The sample consisted of 181 adults divided into three groups according to their educational level: up to 8 (n=36), 9-12 (n=57), and above 12 (n=88) years of education. We used a computerized dynamic FER task with stimuli depicting actors displaying typical features of six basic emotions (happiness, sadness, fear, disgust, anger, and surprise) that subjects were asked to recognize, besides a non-verbal test for the assessment of global intelligence. Data were analyzed using parametric statistics with accuracy as the outcome variable. We found differences across groups in the recognition of all emotions but happiness (p=0.55) and anger (p=0.06), and subjects with up to 8 years of education performed worse than the other groups, between which no differences were found. When gender was entered in the analysis, we found that differences were more prominent among women and were almost absent among men. Our data show the effect of education on FER, with subjects who have higher education showing increased capacity to perform the task. This result points to the influence of environmental aspects in FER and show that education should be considered as a confounding variable in clinical studies assessing FER.

**NO. 80**

**LUPUS PSYCHOSIS QR STEROID PSYCHOSIS? A CHALLENGING COMPLEX PRESENTATION OF A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS.**

*Lead Author: Carolina I. Retamero, M.D.*
*Co-Author(s): Samidha Tripathi,M.D.*

**SUMMARY:**
Objectives:
1) To be able to identify the neuropsychiatric manifestations of systemic lupus erythematosus.
2) To be able to differentiate lupus psychosis from steroid psychosis.
3) To be able to understand the role of Anti-ribosomal P protein in diagnosing neuropsychiatric lupus.
Introduction:
Systemic lupus erythematosus (SLE) is a chronic inflammatory disease that can affect the skin, joints, kidneys, lungs, nervous system, serous membranes, and/or other organs of the body, and it is characterized by the production of a number of antinuclear antibodies. Central nervous system neuropsychiatric lupus refers to several psychiatric and neurological manifestations that develop secondary to involvement of the CNS including, but not limited to, encephalopathy, coma, depression, and psychosis. Lupus cerebritis refers to the neuropsychiatric manifestations of lupus that appear to have an organic basis, rather than a specific pathophysiologic mechanism. The distinction between organic and functional causes of some neuropsychiatric symptoms can occasionally be made by assaying for specific auto antibodies and some authors have found an association between Antiribosomal P antibodies and lupus psychosis and depression. The authors will present the case of 56 year old African American man with severe psychotic symptoms with a differential diagnosis of lupus cerebritis, steroid psychosis and vascular dementia, and the challenges in diagnosis and treatment of such a complex case.
Methods:
Pub Med and Ovid databases were searched using the following Key words: Neuropsychiatric lupus, steroid psychosis, vascular dementia. A retrospective chart review was conducted.
Discussion:
Most acute psychiatric episodes occur during the first two years after the onset of SLE. Our patient's presentation was complicated by many factors including the possibility of lupus cerebritis (which was never clearly established) and steroid psychosis. High doses of steroid used to treat lupus can have adverse effects and further worsen psychosis. Anti-ribosomal P protein, though highly specific for SLE are present only in minority of patients with SLE. Anti-ribosomal P protein testing has limited diagnostic value for central nervous system SLE. Some studies have suggested an association between the presence of anti-ribosomal P protein antibodies and neuropsychiatric manifesta-

tions of SLE, particularly psychosis, but the jury is still conflicted about this.
Conclusion:
SLE is a chronic inflammatory disease that can affect multiple organ systems. Neuropsychiatric manifestations of SLE are not uncommon and psychosis in the patient with lupus may be caused by steroid therapy as well. This case highlights the challenging, multidisciplinary, and multi specialty approach required to achieve success in accurate diagnosis and treatment of these patients.

**NO. 81**

**LONGITUDINAL CHANGES IN CEREBELLAR VOLUME IN ADULT-ONSET NIEMANN-PICK DISEASE TYPE C PATIENTS TREATED WITH MIGLUSTAT**

*Lead Author: Mark Walterfang, M.B.B.S., Ph.D.*
*Co-Author(s): Elizabeth A. Bowman, Ph.D, Dennis Velakoulis, MBBS, DMedSci, FRANZCP, Larry A. Abel, Ph.D, Michael C. Fahey, MBBS, Ph.D, FRACP*

**SUMMARY:**

Niemann-Pick disease type C (NPC) is a rare neurovisceral disorder resulting in impaired intracellular lipid trafficking, which frequently presents with psychosis in adults. The only disease-modifying treatment available is miglustat, an iminosugar that inhibits the accumulation of lipid by-products in neurons. The aim of this study was to explore how cerebellar gray and white matter volumes related to patient treatment status and illness-related disability and ataxia ratings.
Nine adult-onset NPC patients and 17 age- and gender-matched controls underwent T1-weighted MRI. One NPC patient was not receiving miglustat, and pre-treatment data was available for a further NPC patient. Semi-automated cerebellar segmentation and longitudinal analysis were undertaken, and the rates of change in gray and white matter volumes compared to rates of change in illness symptom score, ataxia, and horizontal saccadic gain.

Untreated NPC patients lost gray and white matter significantly faster than treated patients; rates of change in treated patients were not significantly different to those seen in controls. The rate of gray matter volume loss was significantly correlated with change in illness symptom score; loss of white and gray matter volume correlated with the rate of decrease in saccadic gain. No relationship was found between volume change and ataxia score.
This is the first study to examine longitudinal treatment effects of miglustat on brain volumes in patients with adult-onset NPC, and suggests that it may have a protective effect on cerebellar structure and function.

**NO. 82**

**KETAMINE AUGMENTATION OF ANTIDEPRESSANT RESPONSE TO ECT IN TREATMENT-RESISTANT DEPRESSION.**

*Lead Author: Ranjit C Chacko, M.D.*
*Co-Author(s): Linda Barloon,Psych NP*

**SUMMARY:**

Introduction:
ECT is indicated in patients for Treatment Resistant Major Depression after trials of several antidepressants and psychotherapy have failed.Ketamine,has a different mechanism from most antidepressants which target monoamine uptake inhibitors,instead blocks glutamate binding at the NMDA receptor.A series of studies over the past 12 years have demonstrated that ketamine produces rapid reversal of depressive symptoms and suicidal ideation.Previous case reports and a few studies have shown mixed results when using ketamine with ECT.Inability to reproduce a sustained response with ketamine infusions and concerns about potential physiological and psychological risks have limited widespread use.
The aim of this study was to explore the potential benefit of ketamine to enhance the effects of ECT in severely depressed,Treatment resistant patients with suicidal ideation.
Methods:
16 patients with an episode of severe Treatment resistant Major Depression and suicidal ideation were included in the study.Age ranged from 39 yrs to 77 yrs,12 females and 4 males, Mean PHQ 9 scale score on entry was 24,representing severe symptoms,all patients endorsed suicidal ideation.Patients with a history of substance abuse or psychotic symptoms were excluded.
Patients received a lower than standard dose of propofol together with ketamine infused at a concentration of 0.5 mgm/kg before receiving ECT.All patients received 8 ECT,bilateral and RUL electrode placement was utilized as clinically indicated.
Results:
13 patients achieved complete remission of Depressive symptoms with no suicidal ideation at the completion of 8 ECT. Mean PHQ 9 score for remitted patients was 3,representing minimal depression.4 patients have required maintenance ECT to maintain remission.Earlier responses and a positive effect on suicidal ideation during the course of ECT was seen in all remitted patients.Ketamine augmentation however did not reduce the number of ECT required to produce remission.All patients tolerated the use of ketamine and propofol with no significant adverse physiologic or psychiatric effects.
Conclusions:
Ketamine combined with propofol anesthesia for ECT may enhance the rapid response of depressive symptoms and suicidal ideation in patients with Treatment resistant severe Major Depression.

**NO. 83**

**DEEP BRAIN STIMULATION FOR TREATMENT OF RESISTANT DEPRESSION: A REVIEW OF AVAILABLE EVIDENCE AND PERSPECTIVES.**

*Lead Author: Amna A. Ghouse, M.B.B.S., M.D.*
*Co-Author(s): Marsal Sanches, M.D., PhD., Giovana Zunta-Soares, M.D., Danielle E. Spiker, B.A., Prashant Gajwani, M.D., Albert J. Fenoy, M.D., Jair C. Soares, M.D., PhD.*

**SUMMARY:**

Background: Major depressive disorder (MDD) represents a substantial health burden worldwide. At least 30% of MDD patients show resistance to antidepressant medications. This high prevalence of treatment–resistant depression has motivated the search for alternative treatments, including different neurostimulation techniques, which have grown in popularity over the past decade. Deep brain stimulation (DBS) is a specific strategy for the treatment of resistant depression that involves the bilateral placement of electrodes at specific neuroanatomi-

cal sites, aiming at delivering continuous stimulation from a subcutaneously implanted pulse generator. We carried out a literature review on the different varieties of DBS that have been tested for the treatment of depression. Methods: the database PubMed was searched, using the MeSH terms "major depressive disorder" and "deep brain stimulation". In addition, the online database "clinicaltrials.gov" was searched for trials targeting patients with MDD with DBS, and the results obtained were manually screened. Finally, a manual search of bibliographical cross-referencing was performed. All available sources, such as review articles, original studies, and ongoing clinical trials were included. Results: Different brain sites have been targeted by DBS for the treatment of resistant depression, including the subcallosal cingulate gyrus, the anterior limb of the capsula interna, the nucleus accumbens, the ventral striatum, the inferior thalamic peduncle, the lateral habenula and, more recently, the medial forebrain bundle. Although the efficacy of DBS in the treatment of depression shows some variation according to the brain area stimulated, different studies in Germany and US point to positive effects in up to 50% of the cases. In addition to the effects on mood, evidence suggests that DBS also brings about improvements in the cognitive performance of the patients. The incidence of serious adverse effects was small, with no patients experiencing long-term deficits as a consequence of the procedure. Conclusions: Even though DBS is not yet approved by the FDA for the treatment of depression, literature findings support its positive effects in the treatment of resistant MDD. Despite its invasiveness when compared to other neurostimulation techniques, DBS seems to be a promising strategy, to be utilized conservatively in the management of severely depressed patients, when other approaches have failed.

**NO. 84**

**BRAIN MUSIC THERAPY (BMT): A SELF-GUIDED NEUROFEEDBACK INTERVENTION FOR ANXIOUS INSOMNIACS**

*Lead Author: Margaret Goracy, M.D.*
*Co-Author(s): Aimee N.C. Campbell, Ph.D., Deborah L. Haller Ph.D., A.B.P.P., Colette L. Haward M.D., Galina Mindlin M.D., Ph.D.*

**SUMMARY:**
Objective: This pilot study assessed short-term outcomes and acceptability of "brain music therapy" (BMT), a self-guided neurofeedback intervention for anxious insomniacs. One-third of Americans experience symptoms of insomnia every night or almost every night. Poor sleepers often suffer from anxiety. They have difficulty "shutting down" their brains when trying to switch from states of hyper-arousal to more calming states that allow the brain to enter and maintain sleep on an efficient basis. Hypnotic medications are the most common treatment for short-term management of insomnia, but long-term use is associated with performance decrements and tolerance/dependence. Behavioral treatments are safer, but require repeated visits to trained professionals. Self-guided behavioral approaches are needed.
Methods: Fifteen participants with clinically significant insomnia and anxiety were recruited passively at St. Luke's-Roosevelt Hospital Center in New York City. Participants provided informed consent, completed a baseline assessment and underwent EEG. Participants were a mean age of 43.9 (SD=11.4), primarily women (66.7%), White (60.0%), and employed (93.4%), and all were at least college-educated (100%). Slow and fast wave brain patterns were converted to piano music tracks and transferred to CDs. All participants were instructed to use their personalized CDs to facilitate sleep and anxiety reduction (relaxing track) or to stimulate focus and alertness (activating track) on a daily basis. Repeated measures of sleep, anxiety, daytime functioning and quality of life were assessed at baseline and weeks 3 and 6.
Results: Results demonstrated improvement from baseline to week 6 on measures of sleep, anxiety, and negative functioning (i.e., fewer negative effects); no significant changes were found for positive functioning (i.e., more positive effects) or for quality of life. Sleep quality, measured on a 100 point scale, improved 51% from baseline (M=26.1, SD=17.9) to week 6 (M=60.1, SD=12.9). Using ANOVA, sleep satisfaction improved [F(2)=7.62; p=.002] and number of nights awakening, with difficulty falling back to sleep, decreased [F(2) = 8.13; p= .002]. State anxiety, measured via the State-Trait Anxiety Inventory, decreased from the 70th to the 57th percentile. As insomnia and anxiety declined, daytime functioning improved. Intervention acceptance was high, with participants reporting ease of use, helpfulness, and willingness to refer friends with similar problems.
Conclusion: Results show preliminary promise for brain music therapy as a treatment for anxious insomnia. The intervention is user friendly, while eliminating the need for potentially dangerous hypnotics and repeat visits to psychotherapists. Future research is needed to examine the efficacy of brain music therapy in a controlled trial and with diverse populations.

**NO. 85**

**ALTERATION OF THE SLEEP/WAKE CYCLE DURING RTMS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER: A WAIST ACTIGRAPHY STUDY**

*Lead Author: Masaki Nishida, M.D., Ph.D.*
*Co-Author(s): Masaki Nishida, M.D., Ph.D. , Sen-ichiro Kikuchi, M.D., Ph.D., Harumichi Saito, M.D., Kenji Matsumoto, M.D., Ph.D., Yoshiki Yamauchi, M.D., Ph.D., Katsutoshi Shioda, M.D., Ph.D., Shiro Suda, M.D., Ph.D., Koishi Nisijima, M.D., Ph.D., Satoshi Kato, M.D., Ph.D.*

**SUMMARY:**
The effects of repetitive transcranial magnetic stimulation (rTMS) on sleep/wake cycle are still under debate. To evaluate the effects of rTMS on sleep/wake cycle in patients with major depressive disorder (MDD), we used the waist-actigraphy through rTMS treatment. Ten patients with MDD underwent 10 daily rTMS sessions over the bilateral dorsolateral prefrontal cortex. Waist-actigraphy, which is able to record daily activity and evaluate sleep structure, was attached to the patients. Acquired data was averaged into four section, baseline (pre-rTMS), early part (the first four sessions), middle part (the middle three sessions) and latter part (the last three sessions). Although Pittsburgh Sleep Quality Index (PSQI) significantly improved throughout whole rTMS session, sleep parameters showed no significant improvement at the end of rTMS session compared with the baseline. Inversely, daily activity and calorie consumption continued increasing through the treatment, showing significantly improvement even in the early part, compared with the baseline. These findings suggested that rTMS

may contribute subjective improvement involving activation of cortical activity, as well as reinforcing the ability of patients' spontaneous cure representing resilience.

**NO. 86**

**ELECTROCONVULSIVE THERAPY INDICATIONS ACCORDING TO GENDER DIFFERENCES**

*Lead Author: Özcan Uzun, M.D.*
*Co-Author(s): Abdullah Bolu, M.D., Süleyman Özselek, M.D., Süleyman Akarsu, M.D., Mustafa Alper, M.D., Adem Balıkçı, M.D.*

**SUMMARY:**
Objective: Although there is limited conflict in terms of gender differences in the field of psychopharmacology, it is much more in the field of ECT, the oldest and still most frequently
used psychiatric treatment. Although schizophrenia was the first indication for ECT previously, nowadays the most common indication is major depressive disorder. There is no definitive finding about indication for ECT related to gender differences. This study aimed to investigate gender differences in terms of indication for ECT, response to treatment and side effects that
occur during application.
Method: In this study, a total of 176 adult patients, 39 (22,2%) women and 137 (77,8%) men, who were hospitalized in Psychiatric Hospital of Gulhane Military Medical Academy in Ankara and underwent ECT under general anesthesia between 2007 and 2012 were evaluated retrospectively.
Results: For five years, a total of 176 people, including 137 men and 39 women underwent ECT. For both men and women suicidal idea was the most common indication for ECT. The second reason
was treatment resistance and catatonia was third. Suicidal ideation in female patients and catatonia in male patients was found to be significantly higher ($p < 0.05$).
Discussion: Previous studies stated that ECT has been suggested as a treatment option more common in women than in men and it may be due to the fact that help-seeking behavior among women is more common than men. However, no information was presented in the literature about indication for ECT. In our study, suicidal ideation was the most common indication for ECT for both male and female patients. This indication was present at 64% of female patients and 44% of male patients who underwent ECT. Similarly, catatonia as an indication for ECT was significantly higher in male patients than female patients. Large prospective trials are needed in this regard.

**NO. 87**

**DISCONTINUATION OF SOMATIC MEDICATION DURING PSYCHIATRIC HOSPITALIZATION**

*Lead Author: Heshu Abdullah-Koolmees, Pharm.D.*
*Co-Author(s): Helga Gardarsdottir, Ph.D., Lennart J. Stoker, PharmD, Judith Vuyk, M.D., Toine C.G. Egberts, Ph.D., Eibert R. Heerdink, Ph.D.*

**SUMMARY:**
Background
Besides being treated for psychiatric diseases, psychiatric patients may use medication for somatic diseases and symptoms. Patient hospitalization can result in an increased risk of discontinuation of pharmacotherapy. The aim of our study was to investigate whether psychiatric hospitalization is associated with discontinuation of somatic medication.
Methods
Retrospective crossover follow-up study was performed in patients with a psychiatric hospitalization between 2007–2009 and who got a somatic medication in the 3 months prior to hospitalization. Information on inpatient and outpatient medication use, and patient characteristics (age, gender, duration of hospitalization, and ward of admission) was collected. Patients were classified as discontinuers when a somatic medication was discontinued at the time point compared to the control period. Relative risk (RR) of discontinuation of somatic medication was estimated by comparing risk of discontinuation on the following time points: index date (psychiatric hospitalization), 9, 6 and 3 months before index date, using conditional logistic regression.
Results
471 hospitalized patients got a somatic medication dispensed during the three months prior to hospitalization. Mean age was 57.6 years (SD: 16.7), and 59.0% were female. 38.9% of the patients were discontinuers on index date while this was 21.6 – 24.3% on the time points prior to hospitalization. RR for discontinuation of somatic mediation was 1.88 (1.55-2.27) at index date and highest for patients <45 years (RR=2.83, 1.92-4.18), hospitalized for <8 days (RR=2.81, 1.87-4.21), admitted to nonpsychogeriatric wards (RR=2.45, 1.91-3.14) and users of acid and bowel related medication (RR=2.34, 1.81-3.01).
Conclusions
Discontinuation of somatic medication during psychiatric hospitalization occurred in almost 39% of the patients while <25% of the patients discontinued at least one somatic medication in the year prior to hospitalization. More research is needed about whether discontinuation of somatic medications during psychiatric hospitalization is intended or unintended.

**NO. 88**

**ACTION RESEARCH: TESTING INTERVENTIONS TO PREVENT VIOLENCE IN INPATIENT PSYCHIATRIC SETTINGS**

*Lead Author: Ellen W. Blair, B.S.N., M.S.N.*
*Co-Author(s): Stephen B. Woolley, DSc, MPH, Bonnie L. Szarek, RN, Theodore F. Mucha, MD, Olga Dutka, MSN, MBA, Harold I. Schwartz, MD, John W. Goethe, MD, Jeff Wisniowski, MPH.*

**SUMMARY:**
Objective: To describe the process of action research efforts to prevent violence among psychiatric inpatients.
Method: A longitudinal study compared violence measured by use of seclusion (S) and restraint (R) before the intervention (10/08-9/09), during (10/09-9/10) and after (>9/10). Sequentially introduced components of the intervention include evidence based practices. Components included S/R event review, application of the Brøset Violence Checklist, protocol development for use of S/R, and introduction of environmental and equipment changes designed to reduce patient anxiety and anger. Clinician qualitative input collected during rigorous staff debriefings post violent events influenced intervention development and clinician awareness of productive responses to potential violence. Goal of analysis was assessment of effects of introduced components on S/R use.

Results: Study interventions were introduced in hospital protocols. This staged study examined 4460 patients admitted in the pre-implementation period (receiving S 346 events/2123.7 total hours, R 207/978), 4545 admitted during implementation (S 233/1788.3, R 196 /1390), and 4301 admitted in post-implementation (S 174/1708.9, R 147/1293.5). Events and hours of seclusion were statistically significantly reduced in the combined post-intervention implementation and the following 2 year period- 33% and 78% respectively. Changes in restraint were not significant: interestingly, events increased, however hours decreased. The trend over time supported the effectiveness of the cumulative interventions and specific components introduced.
Conclusions: The intervention quantitatively reduced patient violence and qualitatively enhanced clinician awareness of options to address potential violence. The study of staff re-education challenged well-established historical clinical staff patterns of thinking and action to reduce patient violence resulting in a culture change. The study incorporated changes in evidence based practices previously shown to be individually associated with level of violence. Assessment to date documents success of the interventions. The substantial reduction in seclusion events and hours is suggestive of both a productive staff culture change, and patient response to new prevention, intervention and comfort measures. A more violent self/other injurious patient population, for whom seclusion was contraindicated, showed a smaller decrease in restraint hours. This subgroup may not respond as well to current interventions-further study is needed. Administratively, results suggest interventions to reduce violence must involve frontline staff with leadership support and involvement. New administrative and clinical policies have been put into place to support the continuing quality improvement and safety efforts prompted by this research.

**NO. 89**

**EVIDENCE OF THE SUCCESS OF INTERVENTIONS TO PREVENT VIOLENCE AND REDUCE USE OF SECLUSION AND RESTRAINT IN AN INPATIENT PSYCHIATRIC SETTING**

*Lead Author: Ellen W. Blair, B.S.N., M.S.N.*
*Co-Author(s): Stephen B. Woolley, DSc, MPH, Bonnie L. Szarek, RN, Theodore F. Mucha, MD, Olga Dutka, MSN, MBA, Harold I. Schwartz, MD, John W. Goethe, MD, Jeff Wisniowski, MPH*

**SUMMARY:**
Objective: Identify factors associated with use of (S) and restraint (R).
Methods: Data collected (10/2008-9/2013) included the Brøset Violence Checklist (BVC), S and R events/hours, diagnoses, medications (Rx), and results of post-S/R staff debriefing. Data analysis: bivariates and regressions.
Results: Trends Graphical analysis showed significant decreases in S events (p=.04) and hours (p<.001); decrease in R hours (-32%) was not significant (p=.47) and the slope of R events rose over time. Medications Near S/R Events Within the hour before 936 S/Rs, 29% received antipsychotics (APs) and 15% benzodiazepines (BDs). BVC Analysis 5727 inpatients were scored for 8299 inpatient stays (night, day & evening shifts) during 108,718 inpatient days (1/2009–2/2012): 2% of stays had ≥1 S, 3% ≥1R, and 1% both. Regression analysis showed females less likely to have S (-32%; p<.01) and R (-26%; p<.01); association with age was positive for R (p<.001) but negative for S (p<.001); race/ethnicity were not associated with S or R. LOS was associated (positively) with R (p<.001) but not S (p=.51). Among disorders, schizoaffective (p<.001), impulse control (p=.02) and bipolar (p=.06) were associated with S but not R; substance abuse was associated with S and R (p<.01 & p<.001, respectively). Both APs (p<.05 & p<.001) and BDs (p<.001 & p<.05) were associated S and R. Of symptoms, irritability was most strongly associated with S (odds ratio=24.5; p<.001) and R (23.1; p<.001): also associated with S were confusion (2.9; p<.001), verbal threats (2.6; p<.001) and boisterousness (2.3; p<.001); with R were confusion (4.4; p<.001), physical threats (3.6; p<.001) and boisterousness (2.7; p<.001). Among interventions, Rx and continuous supervision were positively associated with S (3.8; p<.001 & 2.7; p<.001) and with R (1.9; p<.001 & 2.5; p<.001). For both S and R, diversional activity was negatively associated (0.52; p<.001 & 0.73; p<.01, respectively). Debriefing Review 190 patient-events met criteria for staff/administrative review. Events occurred during group sessions (28%), meals (15%) and shift changes (7%). Factors for S/R events included unmet patient needs (27%), 10% of which were avoidable; known history of violence (85%) but this was communicated by staff upon patient arrival (89%); rapid response protocol successful in 99%; PRN Rx offered (78%); events judged avoidable in 2% of S/R. All staff members were aware of protocol for S/R use, 99% of techniques to soothe patients, and 84% of comfort/sensory measures items, and restraints equipment was available (99%).
Conclusion: Data show a reduction in the use of S and R after intervention. Irritability was by far the most strongly associated symptom (both S & R): as expected, substance abuse and treatment with APs and BDs were associated with the S/R use. Staff, equipment and support were prepared/available for responses.

**NO. 90**

**A RANDOMIZED, PLACEBO-CONTROLLED REPEAT-DOSE THOROUGH QT STUDY OF INHALED LOXAPINE IN HEALTHY VOLUNTEERS**

*Lead Author: James V. Cassella, Ph.D.*
*Co-Author(s): Daniel A Spyker, Ph.D, M.D.; Paul Yeung, M.D., M.P.H.*

**SUMMARY:**
OBJECTIVE: To investigate potential effects on cardiac repolarization (QT-interval) of 2 consecutive doses of inhaled loxapine administered 2hr apart, in relation to placebo and active control (NCT01854710).
BACKGROUND: Single-dose administration of inhaled loxapine via the Staccato® system was not associated with clinically relevant QT prolongation, but the effect of repeat dosing of inhaled loxapine on QTc prolongation has not been previously studied.
DESIGN/METHODS: This randomized, double-blind, positive-controlled, cross-over study was conducted in healthy volunteers (aged 18-65y). Each subject received: 2 doses of inhaled loxapine (10mg)+oral placebo; 2-doses inhaled placebo+oral placebo; or 2 doses inhaled placebo+oral moxifloxacin (400mg) [positive control], with >3-days washout between treatments. Inhaled doses were spaced by 2hr. Primary outcome was maximum effect of inhaled loxapine on QTc interval duration vs. placebo at 12 preselected time points across the 24-hr post dose interval.

RESULTS: Of 60 enrolled subjects (33.8y; 52% male), 45 (75%) completed the study. Inhaled loxapine did not increase QT interval across 24hr post-dose follow-up, as demonstrated by a maximum mean increase in the placebo-corrected change in QTc from baseline of 4.04 msec at 2hr 5min post first-dose. The maximum mean difference was 3.0 msec with the upper bound of 95% CI of 4.6 msec. As a positive control, the lower one-sided 95% CI for moxifloxacin effect was >5 msec at all 4 predefined post-dose time points.
CONCLUSIONS: No clinically relevant change in QTc was seen with multiple-doses of inhaled loxapine in this population of healthy volunteers. The largest placebo-adjusted, baseline-corrected QTc based on individual correction method was <10 msec threshold. Data suggest that inhaled loxapine is not associated with cardiac re-polarization liability.
Clinicaltrials.gov identifier: NCT01854710
Funding: This study was funded by Alexza Pharmaceuticals. Medical writing support was provided by Karen Burrows, MPhil, of Excel Scientific Solutions and was funded by Teva Pharmaceuticals.

**NO. 91**
**IS IT TIME FOR A FEDERALLY MANDATED AOT PROGRAM?**
*Lead Author: Subhash Chandra, M.B.B.S., M.D.*
*Co-Author(s): Sasha Rai MD,* Chinmoy Gulrajani MD

**SUMMARY:**
Forty Five U.S. states authorize some form of AOT (assisted outpatient treatment) program.
In New York AOT has been shown to reduce re-incarceration, re-hospitalization and homelessness. Involuntary outpatient commitment laws are state specific, serious and persistent mentally ill (SPMI) individuals under state mandated AOT can lose care if they choose to leave the state, leading to a decline in their overall functioning.
45 U.S. states authorize some form of AOT (assisted outpatient treatment) program. In New York AOT has been shown to reduce re-incarceration, re-hospitalization and homelessness. Involuntary outpatient commitment laws are state specific, serious and persistent mentally ill (SPMI) individuals under state mandated AOT can lose care if they choose to leave the state, leading to a decline in their overall functioning. This study was conducted to look in to the advantages of having a federally mandated AOT program with a unified policy across the nation. Review of AOT statutes of all 50 states of the US was done; similarities and differences between these statutes were compared and contrasted. The definition of mental illness, grave disability and the criteria for mandating AOT in different states shows a wide range of variation. Federal mental health court program is an innovative and successful approach in diverting offenders into treatment programs and easing the burden on criminal justice system. Similarly with a federally run AOT program there will be a co-ordinated delivery of services across states with no lapse in the treatment thus decreasing the overall cost and providing continuity of mental health care across states.
Key words: AOT, Federal law, State law, SPMI.

**NO. 92**
**LONGER LENGTH OF STAY ASSOCIATED WITH ETHNICITY AND DIAGNOSIS IN PSYCHIATRIC INPATIENT UNIT**
*Lead Author: Cheryl A. Kennedy, M.D.*
*Co-Author(s): Jagadeesh Batana M.D., Praveena Machineni, M.D., Uchenna Madubuko, M.D., MPH,*
*Samina Mirza, M.D., Omar Mohammed, Dmitry Ostrovsky, B.S.*

**SUMMARY:**
Background: Despite dramatic reductions in psychiatric length of stay (LOS) over the past 30 years, LOS remains as a pressure spot in hospital economics as inpatient costs are approximately 16% of health care costs. Psychiatric inpatients typically have a longer LOS than those with other medical conditions. A 2010 systematic review of published LOS studies of inpatient Psychiatric Units in general hospitals found that longer LOS was associated with psychosis, female gender, and larger hospital size; shorter LOS was associated with discharge against medical advice, prospective payment, being married, being detained and either younger or middle age. There is little evidence of how specific diagnosis (aside from psychotic or not) along with ethnicity might affect LOS. In an effort to uncover points for positive interventions (culturally competent patient centered care) to reduce LOS we studied specific diagnoses stratified by ethnicity.
Methods: We examined psychiatric inpatient LOS as part of a quality improvement program at a unit of an inner city academic medical center tertiary care hospital. With Institutional Review Board approval data were abstracted from medical records. For this project we included diagnosis, legal status of admission (involuntary or voluntary), admission and discharge general assessment of functioning (GAF), and co-morbid medical conditions. Demographic data (gender, ethnicity, age) were also collected. Logistic regression was performed to determine if there was any significance association of ethnicity with diagnosis (schizophrenia, schizoaffective, major depressive disorder and bipolar disorder) and LOS. IBM SPSS version 21 was used for all analyses.
Results: Our sample of 145 records was 53% male, 47% female 20% Caucasian, 63% African American 14% Latino, 15% homeless. Overall mean LOS was 9.9 days and overall LOS was significantly higher in older adults (p=0.03; CI= 0.096-2.23). African Americans diagnosed with Schizo-affective disorder had longer LOS (p=0.01, CI=1.4-10.2; n=34; 11 days) and longer LOS was associated with greater improvement of GAF at time of discharge (p=0.04, B=0.2, CI=0.006 to 0.4). There were no significant findings of association of the diagnoses of Schizophrenia (p=0.32), MDD (p=0.18), or Bipolar disorder (p=0.2) when stratified by ethnicity.
Discussion: Cultural competence and geriatric expertise may be a crucial piece of reducing length of stay with older adults and some African Americans on psychiatric units. Psychiatrists are in a unique position to champion the use of culturally sensitive and diverse resources in unit activities and patient education for the common ethnic groups served and targeted resources for adults at various stages of the life cycle that may have varied cognitive understanding of their chronic condition. Further analysis on this data set will attempt to determine the relative contributions of other bio-psycho-social factors may have impact on LOS.

**NO. 93**
**RESTRAINT AND SECLUSION AS THERAPEUTIC INTERVENTIONS: CHANGES ACROSS CONSECUTIVE ADMISSIONS**
*Lead Author: Stephen Pappalardo, B.A.*

*Co-Author(s): David L. Pogge, Ph.D., Martin Buccolo, Ph.D., Philip D. Harvey, Ph.D.*

**SUMMARY:**
Background: We recently showed that restraint and seclusion differed in children and adolescents (n=2411) who were receiving treatment as psychiatric inpatients, with children experiencing more episodes of both of these interventions of shorter duration. In this report, we examine restraint and seclusion in members of that sample (n=471) who experienced a readmission within two years.
Methods: The initial database included two years of data on a total of 2411 child and adolescent inpatients, with 20% being readmitted within that period. Statistical analyses examine the characteristics of the sample at the readmission, including correlations between satisfaction with treatment at discharge from the readmission and the comparisons of the frequency of restraint and seclusion at both admissions. These analyses were performed separately for the samples of children and adolescents.
Results: In the cases who experienced restraint or seclusion at their first admission there was a 22% reduction in occurrence of restraint at the second admission for children and 44% for adolescents. Comparisons of the patients who did and did not experience restraint and seclusion across admissions suggested that these are different populations with different overall risk for restraint seclusions. Risk for seclusion and the number of seclusions was correlated across admissions. Length of stay was shorter at readmission for patients who experienced seclusion or restraint during their first admission. Patients who experienced restraint or seclusion at their readmission did not differ in their rating of satisfaction with treatment at discharge from their readmission from those who did not.
Implications: Children and adolescents who experienced restraint and seclusion at a psychiatric admission had a reduced risk of seclusion at a readmission, but were still at higher risk than cases without restraint and seclusion at the first admission. These reductions in risk, as well as a shorter length of stay at readmission, suggest potentially beneficial effects. The lack of increased dissatisfaction with treatment also indicates that these cases did not see themselves as excessively coerced or victimized by the experience. Nonetheless, the high rate of occurrence of restraint and seclusion suggests that alternative treatment interventions are clearly important.

**NO. 94**

**CHARACTERISTICS OF ADULT PSYCHIATRIC PATIENTS READMITTED WITHIN 30 DAYS AFTER PSYCHIATRIC HOSPITALIZATION**

*Lead Author: Jeff A. Wisniowski, B.S., M.P.H.*
*Co-Author(s): Stephen B. Woolley, D.Sc., M.P.H., John W. Goethe, M.D., Lucas Klein, Ph.D., Bonnie L. Szarek, R.N., Beth Pizzuto, R.N.*

**SUMMARY:**
Objective: Examine characteristics of psychiatric patients (Pts) readmitted for psychiatric hospital treatment ≤30 days of previous discharge (D/C).
Method: Scripted interviews of adult Pts at readmission (R-Adm) (2/2013-5/2013) to the Institute of Living's (Hartford, CT) non-geriatric adult units examined: subjects psychiatric diagnoses (Dx) and medications (Rx); prior treatment (Tx); D/C planning; post-D/C outpatient aftercare and barriers to it; adherence to prescriptions; patient opinions about Tx; Tx sought and triggers for relapse; and patient social/living situations. Clinical history was obtained from hospital records.
Results: 75 readmitted subjects (ages 18-66; mean=39.0) (40% female; 60% male) (47% white; 31% Hispanic/Latino; 20% black) were interviewed. 24% were employed and only 26% had a significant other: 80% rated this relationship at least somewhat unstable. Compared to other inpatients, subjects were older (p=.03), received more Rx (p=.02) and were more likely to have diabetes (p=.03) and hypertension (p=.02). Among subjects, relapse was associated with anxiety at work (56%), not taking Rx (41%) or attending aftercare (34%), and not having social support (36%). Symptoms associated with relapsing included depression (44%), hallucinations/other psychosis (43%), suicidality (39%) and anxiety (35%), which were also common triggers for R-Adm. In prior Tx, 84% met to plan aftercare but only 64% knew the plan and only 61% thought they could get to appointments. 37% reported substance abuse (SAb): 28% of aftercare plans addressed this problem. Of the 35% not attending aftercare, reasons included: for 38%, forgetting, transportation, work, or medical condition; psychiatric symptoms (36%); and costs (18%). Of all subjects, 40% did not take Rx regularly, 43% believing it did not help, and 29% citing Rx side effects. Subjects suggested changes in aftercare: increase/add intensity (30%), case management (9%) and therapy (21%). Prior diagnoses were depression (41%), schizophrenia/schizoaffective disorder (DO) (27%), bipolar DO (25%), anxiety DO (20%) and SAb (52%): for 41% the Dx changed upon R-Adm. Psychiatric Rx at prior Tx included antipsychotics (80%), antidepressants (69%), anticonvulsants (43%), and benzodiazepines (27%). Prior inpatient LOS ranged 1-51 days (mean=10.7), followed by R-Adm in an average 13.8 days, with no change in public vs private insurance.
Conclusions: Common triggers for R-Adm were depression, hallucinations, suicidality and anxiety: relapse was also associated with lack of significant others, anxiety at work, not taking medications and/or attending aftercare, and no social support. Medication non-adherence was associated with side effects and belief that Rx was not needed. More than half said they were not aware of the aftercare plan's content, and more than a third felt they would not be able to get to Tx. Nearly half of subjects suggested changes in aftercare.

**NO. 95**

**ASSOCIATIVE STIGMA IN TRAINEES PSYCHIATRIST: UNKNOWN, UNDERESTIMATED AND UNCHANGEABLE?**

*Lead Author: Kirsten Catthoor, M.D.*
*Co-Author(s): Joost Hutsebaut, PhD, Dineke Feenstra, PhD, Didier Schrijvers, MD, PhD, Bernard Sabbe, MD, PhD*

**SUMMARY:**
Introduction: Stigma is defined as a discrediting and disgracing mark usually leading to negative behavior for its bearer. Associative stigma is an extension of psychiatric stigma to those who care for patients, such as family members and mental health care workers, including psychiatrists. Scientific data on associative stigma in psychiatrists are scarce. Unpublished data (presented at the 15th World Congress of the World Psychiatric Association in 2011) indicate that psychiatrists perceive stigma

more intensely compared with general practitioners and more frequently report stigmatizing experiences as well as the need to fight stigmatization. There is no scientific evidence on the extent of associative stigma in trainee psychiatrists.
Hypothesis: Associative stigma in trainees psychiatrist is comparable to that of their senior counterparts.
Methods: The stigmatization questionnaire in this survey was composed of 21 questions on stigma from 3 different perspectives: subjective experiences of humiliation and devaluation, and possible resulting coping mechanisms, stigma during medical and psychiatric training and stereotypical images of psychiatry and psychiatrists in the media. All members of the Flemish Association of Trainees in Psychiatry (207 in total) were approached to participate in the survey. The questionnaire was not particularly demanding and took 10 minutes to complete. The answers were scored on a Likert scale.
Results: The response rate of the survey was 75.1%. Three quarters of all trainee psychiatrists claimed to have had denigrating or humiliating remarks about the psychiatric profession directed at them more than once. Additionally, more than half of them had had remarks about the incompetence of psychiatrists. Only 1.3% of these young doctors remembered stigma as a topic during their psychiatric training. Trainees who had been in training for a longer period of time had experienced a significantly higher level of stigmatization than trainees with fewer years of experience ($t = -2.179$, $p < 0.05$). The analysis of the individual coping items in the questionnaire revealed that senior trainees effectively kept quiet about their profession significantly more often than their junior colleagues ($t = 2.874$, $p < 0.01$).
Conclusions: Associative stigma in trainees psychiatrist is underestimated. The stigmatization process during the training of psychiatrists is dynamic, with an increasing impact as training proceeds.
Discussion: It could be useful to explicitly start with anti-stigma campaigns during medical training in order to avoid a decrease in the number of candidate psychiatrists. The limited technical aspects of the psychiatric profession make the job more vulnerable in the actual medical practice, where high empirical standards rule the daily routine. Trainers and supervisors should carefully listen to and deal with the doubts, devaluing experiences, and signs of burnout of their trainees.

**NO. 96**

**VENLAFAXINE-MIRTAZAPINE COMBINATION IN THE TREATMENT OF POST TRAUMATIC STRESS DISORDER**

*Lead Author: Abdullah Bolu, M.D.*
*Co-Author(s): Süleyman Akarsu, M.D., Cemil Çelik, M.D., Barbaros Özdemir, M.D., K. Nahit Özmenler, M.D.*

**SUMMARY:**

Objective: Posttraumatic stress disorder (PTSD) is an incapacitating clinical syndrome characterized by intrusive recollections, emotional numbing and withdrawal, cue-related responses, and psychological and physiological hyperarousal. In the treatment of PTSD pharmacotherapy must be supported with psychotherapy to increase the success of treatment. In this study we aimed to evaluate the effect of venlafaxine-mirtazapine combination in the PTSD patients, who did not respond to antidepressant treatment at adequate dose for an adequate duration.
Method: The hospital records of the patients who were diagnosed with PTSD according to DSM-IV diagnostic criteria and did not respond to adequate doses of an antidepressant treatment for adequate duration were examined retrospectively. Data of the patients (n=28), whose treatment were venlafaxine- mirtazapine combination, were obtained. These data were IES-R, Hamilton Anxiety scale and Hamilton Depression Scale scores.
Results: IES-R score, Hamilton Anxiety, Hamilton depression scores of 28 patients who were diagnosed with PTSD were evaluated. A significant decrease in IES-R total, IES-R avoidance, Hamilton Anxiety and Hamilton depression scores ($p > 0.05$) with adequate dose and duration of venlafaxine-mirtazapine treatment were detected. The same change was not accompanied in IES-R hyperarousal and IES-R intrusive test scores.
Conclusion: Post-traumatic stress disorder treatment takes longer and sometimes becomes chronic. According to the results of this study, venlafaxine- mirtazapine combination can be used in the treatment of PTSD patients who did not respond to antidepressant treatment at adequate doses for an adequate duration.

**NO. 97**

**IS THERE A GENETIC COMPONENT INCREASING THE RISK OF GYNACOMASTIA IN CHILDREN TREATED WITH RISPERIDONE?**

*Lead Author: Rasha Elkady, M.D.*
*Co-Author(s): Emaya Anbalagan,M.D., Sultana Jahan,M.D.*

**SUMMARY:**

Introduction:
Gynecomastia is a benign condition characterized by enlargement of the male breast due to proliferation of glandular tissue and deposition of adipose tissue. Pseudogynecomastia is common in obese men and is mainly lipomastia. Some physiological forms related to age (in neonates and during early puberty) can also be seen. Pubertal gynecomastia can also be due to endocrine manifestations like hypothyroidism and Peutz-Jeghers syndrome. Drug-induced occurrences are attributed to 20%-25% of cases of gynecomastia. Common drugs implicated are psychotropic medications like haloperidol, chlorpromazine and risperidone.
Here we discuss cases of two brothers who presented with gynecomastia.
Cases:
Two Caucasian brothers of ages 8 and 16 were brought to the clinic by their mother after she had noticed that both of their breasts were becoming enlarged. Patient A, the younger boy had separation anxiety disorder, attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and mental retardation and was on risperidone 0.25mg by mouth thrice a day, citalopram 20mg daily, clonidine 0.1mg daily. His aggression had markedly improved but he still had occasional anger outbursts where he punched and kicked people. His serum prolactin level was 20.2 (normal in men 2-18ng/ml).The risperidone was gradually tapered and aripiprazole 2 mg twice a day was started for anger and aggressive behavior.
Patient B, the older brother had a diagnosis of ADHD, Mood Disorder NOS and ODD. He was on Methylphenidate ER 54mg daily, lamotrigine 100mg daily, fluoxetine 20mg every morning and risperidone 1mg twice a day. Risperidone had been started

a year ago; around the same time as his brother. On exam, he had bilateral swelling of breast tissue, enlarged areola and nipple, similar to his brother and prolactin level was 30.1. The risperidone was tapered off and he was continued on lamotrigine.

Four months later,their breasts had returned to normal and their prolactin levels had normalized to 0.7 and 7.7 respectively.

Discussion:

In 1985 Berkowitz et al evaluated a family where gynecomastia occurred in five men across two generations and presented evidence that the affected individuals had increased extra-glandular aromatase activity compared with that of normal men. They proposed several possibilities to explain this abnormality. The defect could be due to a gene mutation resulting in an enzyme complex with increased activity; or due to an increase in the intracellular concentration of enzymes, either due to increased production or decreased catabolism of the enzyme. Research has also shown an increased risk of prolactin increase with risperidone in patients carrying the TaqIA and A-241G variants of the Dopamine D2 receptor gene. It is unclear if such a genetic susceptibility exists for the occurrence of gynecomastia. Further research is needed to help establish this better.

**NO. 98**

**THE EFFECT OF LURASIDONE ON FUNCTIONAL REMISSION MEASURED BY THE SHEEHAN DISABILITY SCALE**

*Lead Author: Mariam Hassan*

*Co-Author(s): Elizabeth Dansie, Ph.D., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D., Krithika Rajagopalan, Ph.D., Kathy Wyrwich, Ph.D.*

**SUMMARY:**

INTRODUCTION: Bipolar I depression is characterized by depressive symptoms and impairment in many areas of functioning, including work, family, and social life. Treatment of this condition remains challenging with a continuing need for an antipsychotic that can provide remission in depressive symptoms (defined as Montgomery-Asberg Depression Rating Scale score ≤12) and functioning. While efficacy of lurasidone on symptom remission of bipolar depression has previously been demonstrated, the objective of this study was to assess the efficacy of lurasidone on functional remission, defined as a Sheehan Disability Scale (SDS) total score ≤6 (Sheehan KH, Sheehan DV (2008). Int Clin Psychopharmacol. 23:70–83). METHODS: Post-hoc analysis of data from a 6-week, randomized, double-blind, placebo-controlled clinical trial that assessed the effect of lurasidone as a monotherapy (20–60 mg or 80-120 mg) versus placebo was conducted. Functional remission was measured by the 3-item SDS, a validated patient-reported outcome measure to assess the effect of patient symptoms on functioning in terms of work/school, family, and social life. The SDS total score is the sum of the three items, each measured on a 0-10 visual analogue scale (higher scores indicate greater disability). RESULTS: In this 6-week monotherapy trial (N=485), only a few participants were in functional remission at baseline (1.7%). The mean change in SDS total score from baseline to study endpoint was -10.4 (SD = 7.49) in the lurasidone group and -7.1 (SD = 8.27) in the placebo group. The mean change in SDS subscales of work/school, family life, and social life was -3.2 (SD = 2.83), -3.4 (SD = 2.75), and -3.6 (SD = 2.60), respectively, in the lurasidone group. A greater percentage of participants on lurasidone achieved functional remission in comparison to placebo (40.9% vs. 25.5%, p=0.01) at week 6; the functional remission rate was similar for participants receiving lurasidone 20-60 mg and lurasidone 80-120 mg group (41.1% and 40.6%, respectively). Controlling for baseline SDS total score and study center, the adjusted odds ratio (AOR) for functional remission among participants receiving lurasidone compared to placebo was 3.96 (p<0.01, 95% CI [1.72, 9.13]) in the 20-60 mg lurasidone group and 2.46 (p=0.52, 95% CI [1.12 - 5.43]) in the 80-120 mg lurasidone group. CONCLUSION: Within 6-week study duration, the results of this post-hoc analysis of lurasidone pivotal trial showed statistically significant improvement in functional remission among patients on lurasidone monotherapy compared to placebo group. Lurasidone-treated patients were nearly 2-4 times more likely to have functional remission at 6 weeks in terms of work/school, family and social life measured by the SDS, compared to those on placebo. Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 99**

**CLOZAPINE INDUCES CHLORIDE CHANNEL-4 EXPRESSION THROUGH PKA ACTIVATION AND MODULATES CDK5 EXPRESSION IN THE NEURONAL CELLS**

*Lead Author: Songhee Jeon, Ph.D.*

*Co-Author(s): Yong Sik Kim, M.D., Ph.D.*

**SUMMARY:**

Second-generation antipsychotic drugs, olanzapine, quetiapine, and clozapine, were found to enhance neurite outgrowth induced by nerve growth factor (NGF) in PC12 cells. We have previously shown that chloride channel 4 (CLC-4) is responsible for the NGF-induced neurite outgrowth in neuronal cells. Thus, in this study, we examined whether clozapine could induce CLC-4 in the neuronal cells. We found that chronic clozapine treatment increased CLC-4 mRNA and protein expression and in the rat cortex and in the glioblastoma and neuroblastoma cells. To investigate the signaling pathway responsible for the clozapine-induced CLC-4 expression, we examined phosphorylation of CREB which binds CRE in the promoter that controls the expression of the human CLC-4 gene. Clozapine induced CREB phosphorylation in the neuronal cells and in the presence of inhibitor of PKA, as an upstream kinase of CREB, clozapine-induced CLC-4 expression was suppressed. Next, in order to find out the target of CLC-4, we designed CLC-4 siRNA. Clozapine-induced CLC-4 expression was blocked by transfection of siRNA of CLC-4. While we are searching the target of CLC-4, we found that the CDK5 which could be regulated by cAMP and clozapine also induced CDK5 expression in the neuronal cells. Thus, we examined clozapine-induced CDK5 expression in the CLC-4 knock-downed cells. CLC-4 knock-down suppressed clozapine-induced CDK5 expression. In summary, our results suggest that clozapine-induced CLC-4 modulates CDK5 in neuronal cells.

**NO. 100**

**PATTERNS OF ANTIPSYCHOTIC MEDICATION USE IN LONG-TERM INPATIENTS**

*Lead Author: Ruben Miozzo, M.D., M.P.H.*

*Co-Author(s): Mayra Tisminetzky, MD PHD, Seven Dolley, PharmD, Boris Lorberg, MD, Jeffrey Geller, MD MPH*

**SUMMARY:**
Introduction: Pharmacological treatment of patients with severe mental illness (in particular those affected with schizophrenia) has remained a challenging task in spite of the recent pharmacologic advances. The use of polypharmacy (prescription of more than one antipsychotic drug for an individual patient) has become a frequent approach despite limited supporting evidence. In addition, polypharmacy has been associated with several negative outcomes as increased hospitalization rates and length of stay and adverse effects. Despite these factors, there is little information about the prevalence and characteristics of polypharmacy in long term inpatient settings. Objective: To explore patterns of prescribing antipsychotic agents in a long-term inpatient facility. To examine the prevalence of polypharmacy (as defined by multiple -2 or more- antipsychotic agents for an individual patient) and its association with age, sex, ethnicity and legal status of the individual patient. To determine the association of antipsychotic agents and polypharmacy use with increased body mass index (BMI). Method: We examined the prescribing of antipsychotic drugs in a sample of 234 in-patients, during a 2-month period in a long term in-patient facility in Central Massachusetts during 2013. We performed a comprehensive review of patients' medical records and collected information on: age, sex, ethnicity, admission date, body mass index, primary and secondary diagnoses, legal status (voluntary versus involuntary). We examined the use of the selected antipsychotic agents (haloperidol, clozapine, olanzapine, and risperidone) as well as calculated the median dose in milligrams for each agent. In order to explore the frequency and characteristics of polypharmacy use in our population, we created an additive score of antipsychotic use and determined how various demographic factors, diagnoses (affective versus psychotic disorder), and legal status were associated with an increase in the use of multiple antipsychotic agents. We calculated the frequency of antipsychotic agents use in combination, and particularly determined the frequency of polypharmacy in patients receiving clozapine. Finally, we examined the association of high body mass index (>25) with the use of particular antipsychotic agents alone, as well as with the use of polypharmacy.

**NO. 101**

**VORTIOXETINE PRODUCES ACUTE AND SUSTAINED ENHANCEMENT OF MONOAMINERGIC NEUROTRANSMISSION VIA 5-HT RECEPTOR MODULATION AND 5-HT TRANSPORTER INHIBITION.**

*Lead Author: Arne Mørk, D.M.Sc., Ph.D.*
*Co-Author(s): Alan L. Pehrson, Ph.D., Cecile Bétry, Ph.D., Nasser Haddjeri, Ph.D., Connie Sánchez, Ph.D.*

**SUMMARY:**
Objective: Vortioxetine is a new antidepressant with multimodal activity working through several serotonergic targets. Vortioxetine functions as a 5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist and inhibitor of the 5-HT transporter (SERT) in vitro. Vortioxetine exerts antidepressant- and anxiolytic-like effects and reverses memory deficits in preclinical models. Here we investigated the acute, subchronic and chronic effects of vortioxetine on monoaminergic neurotransmission in the rat.
Methods: Extracellular levels of serotonin (5-HT), norepinephrine (NE), and dopamine (DA) were studied in the ventral hippocampus (vHC), medial prefrontal cortex (mPFC) and nucleus accumbens (NAc) of freely moving Sprague Dawley rats following acute, 3-day or 14-day treatment with vortioxetine. Dialysates were analysed using HPLC with electrochemical detection. Effects on firing activity of serotonergic neurons were studied by in vivo electrophysiology in anaesthetized rats.
Results: Acute vortioxetine (2.5-10 mg/kg sc) dose-dependently increased extracellular levels of 5-HT in the vHC, mPFC and NAc. Maximal 5-HT levels in the vHC were higher than those in the mPFC. Furthermore, cortical 5-HT levels were increased at low SERT occupancies. In the vHC and mPFC, but not the NAc, high vortioxetine doses increased NE and DA levels. Following subchronic treatment (5-28 mg/kg/day minipumps sc), vortioxetine increased 5-HT levels in vHC to a significantly greater extent than the SSRI escitalopram despite similar SERT occupancy. In the mPFC, subchronic vortioxetine significantly increased levels of 5-HT, NE and DA. Chronic oral administration (18 mg/10 g food pellet, a concentration leading to pharmacologically relevant target occupancies) caused marked increases in 5-HT and NA in the vHC. DA levels were not significantly increased. Firing activity of dorsal raphe nucleus 5-HT neurons declined after initiating treatment with vortioxetine (5 mg/kg/day sc) or the SSRI fluoxetine (10 mg/kg/day sc). Recovery of 5-HT neuronal firing was achieved after 1 day with vortioxetine and 14 days with fluoxetine. The rapid recovery with vortioxetine was delayed by co-administration of the 5-HT3 receptor agonist SR57227. In acute studies, the 5-HT3 receptor antagonist ondansetron potentiated citalopram or paroxetine-induced increases in extracellular levels of 5-HT.
Conclusions: Vortioxetine induced acute and sustained elevation in extracellular levels of 5-HT, NA and DA in brain regions implicated in the pathogenesis of depression. The rapid recovery in 5-HT neuronal firing compared to that of fluoxetine and the marked increases in 5-HT levels after vortioxetine administration seem partly to involve the 5-HT3 receptor. Thus, in contrast to SSRIs, vortioxetine acts via two pharmacological modalities, 5-HT receptor modulation and SERT inhibition, resulting in brain region-dependent increases in monoaminergic neurotransmitters.

**NO. 102**

**ANTIPSYCHOTIC-INDUCED PANCREATITIS: INCREASED LIABILITY ASSOCIATED WITH CLOZAPINE AND OLANZAPINE**

*Lead Author: Matisyahu Shulman, M.D.*
*Co-Author(s): Matisyahu Shulman, M.D., Howard Levin, M.D., Haskel Fleishaker, M.D., Christoph U. Correll, M.D., and Peter Manu, M.D.*

**SUMMARY:**
Background: Pharmacovigilence data published by the U.S. Food and Drug Administration in 2003 have identified clozapine, olanzapine and risperidone as the drugs preeminently involved in antipsychotic-induced pancreatitis. This condition was shown to have a mortality of 11.6%.
Objective: To determine if the cases reported in the past 10 years (2003-2012) confirm the risk of pancreatitis associated with clozapine, olanzapine and risperidone, given the fact that during this period a large number of patients have been treated with newer antipsychotics, such as quetiapine, aripiprazole and ziprasidone.

Methods: Medline search for articles reporting pancreatitis associated with antipsychotic treatment. The case reports were tallied by individual drugs and case-control studies were used to calculate the odds-ratio of pancreatitis in patients exposed to antipsychotic drugs.
Results: The literature search revealed 38 new cases of pancreatitis associated with a single antipsychotic reported from 2003 through 2012. The drugs involved were olanzapine (n=18), clozapine (n= 6), risperidone. (n= 6), quetiapine (n=4), and aripiprazole (n=4). Three case-control series revealed an odds ratio of 1.77 (95% confidence interval 1.55-2.1), but lacked power to assess the effects of antipsychotics when additional risk factors such as alcohol use and the presence of cholelithiasis were included in the analysis.
Conclusion: Clozapine and olanzapine have continued to be the drugs most often reported as the cause of antipsychotic-induced pancreatitis. The mechanisms that differentiate these drugs from other antipsychotics are unknown. Case-control studies have also failed to identify a significant increase in risk when traditional risk factors for acute pancreatitis are taken into account.

**NO. 103**

**DO PHYSICIANS' PRESCRIBING PRACTICES REFLECT OPTIMAL TREATMENT? EVIDENCE FROM PRIVATELY INSURED CHILDREN AND ADOLESCENTS WITH DEPRESSION**

*Lead Author: Rene Soria-Saucedo, D.M., M.P.H., Ph.D.*
*Co-Author(s): Heather J. Walter M.D., MPH.,Mary Jane England M.D, Howard Cabral, Ph.D., Lewis E. Kazis. Sc.D*

**SUMMARY:**

Importance. An increasing number of psychotropic medications have been marketed to physicians for the treatment of depression in children and adolescents (C&A), yet sparse to no empirical evidence definitively supports their effectiveness or safety. The optimal approach to the treatment of depression in C&A combines evidence-based psychotherapy and fluoxetine (the only FDA-approved antidepressant for both C&A), intended to maximize benefit while minimizing risk. However, the degree to which this approach has penetrated physician practice is unclear.
Objective. To examine the frequency of utilization of six approaches to the treatment of depression with varying degrees of empirical support in a national sample of privately insured C&A
Design. Cross-sectional observational study of 2009 nationally representative data sample. Bivariate and multivariable logit regression models were applied.
Setting. A privately insured population (MarketScan database)
Participants. Study sample included 13,364 (19.8%) of total 61,599 Children and Adolescents (C&A) with depression, from a total of 6,225,600 privately insured C&A in 2009.
Main Outcome Measure. The likelihood of receiving six different treatment options: optimal treatment, first line (fluoxetine), second line (Selective Serotonin Reuptake Inhibitors (SSRIs)), psychotherapy alone, and non-evidence based options (SNRIs, NaSSas, NDRIs, SGAs).
Results. Only 58.4% of C&A received at least one type of depression-related treatment and just 2.7% received optimal treatment; 33.6% received psychotherapy alone and 24.8% received medication with or without psychotherapy. Mental health specialists (MHSs) were more likely to prescribe optimal treatment by approximately 10 fold (OR: 9.9; CI: 6.1-15.8), compared to primary care practitioners (PCPs). Other predictors of receiving optimal treatment included early adolescent age group and residing in the Northeast.
Conclusions and Relevance. Data suggests that large proportions of depressed C&A are being exposed to unsafe, uncertain or no treatment choices. Results should caution physicians to adopt safer and more evidence-based treatment options in depressed youth.

**NO. 104**

**PHARMACOLOGICAL PROFILE OF BREXPIPRAZOLE (OPC-34712): A NOVEL SEROTONIN-DOPAMINE ACTIVITY MODULATOR**

*Lead Author: Tine B. Stensboel, Ph.D.*
*Co-Author(s): Hitomi Akazawa, M.S., Morten Hentzer, Ph.D., Tetsuro Kikuchi, D.V.M., Ph.D., Linda Lerdrup, Ph.D., Kenji Maeda, Ph.D., Jun Shimada, M.S., Haruhiko Sugino, Ph.D.*

**SUMMARY:**

Background:
Brexpiprazole is a serotonin-dopamine activity modulator being developed as a novel treatment for different psychiatric disorders.
Objectives:
To evaluate the preclinical pharmacological profile of brexpiprazole, as well as its potential for treatment in a range of psychiatric disease.
Methods:
The in vitro pharmacological profile of brexpiprazole for multiple monoaminergic receptors was demonstrated using receptor binding and functional assays. In vivo receptor occupancy at relevant targets was investigated in rat brains. The therapeutic potential of brexpiprazole as an antipsychotic and as adjunctive treatment for depression was also evaluated in several relevant animal models.
Results:
Brexpiprazole demonstrated high binding affinities for 5-HT1A/2A/2B/7, D2L/3, and alpha1A/1B/1D/2C (Ki values < 5 nM). In functional assays, brexpiprazole showed potent partial agonistic activities at 5-HT1A and dopamine D2 receptors within same range of potency, and antagonistic activities at 5-HT2A and noradrenaline alpha1B receptors. Consistent with in vitro binding affinities, in vivo receptor occupancy of brexpiprazole showed the following order of potency: 5-HT2A = D2 > 5-HT1A > 5-HT6 > 5-HT transporter > 5-HT7.
Brexpiprazole dose-dependently inhibited apomorphine-induced hyperlocomotion and stereotypy and conditioned avoidance response in rats, as well as apomorphine-induced eye blinking in monkeys, indicating a potent and efficacious functional antagonistic activity at D2 receptor with an antipsychotic-like profile.
The effect of combining brexpiprazole with SSRIs, SNRIs, or diazepam was investigated in forced swim test (FST) and marble burying behaviour (MBB) test in male ddY mice. The combination of brexpiprazole with each of the SSRI, SNRI or diazepam showed significant and synergistic anti-depressant effect in both tests.
Conclusions:
Brexpiprazole shows a unique pharmacology as a serotonin-

dopamine activity modulator and has the potential to deliver robust efficacy and safety/tolerability across a broad spectrum of psychiatric disorders.

**NO. 105**

**TREATMENT WITH ASSOCIATION BETWEEN GALANTAMINE AND ESCITALOPRAM IN MILD COGNITIVE DISORDER AND DEPRESSION**

*Lead Author: Julio C. Zarra, M.D.*
*Co-Author(s): Luisa C. Schmidt, M.D.*

**SUMMARY:**

INTRODUCTION: To evaluate the efficacy of galantamine and escitalopram association in patients with Mild Cognitive Disorder and Depression. So there is a possible relation between the deficit in executive and cognitive cerebral function and depression or relation between the serotonin system and cholinergic system in relation with disease comorbidity cognitive-depression.

METHODS: A group of 924 patients with symptoms of Mild Cognitive Disorder and Depression (DSM IV-TR criteria) were separated in 3 groups of 308 patients. Each group received different treatment in a 18 months period:

Group 1: Galantamine 16 mg/day. (Extended release capsules: 16 mg.)

Group 2: Escitalopram 10 mg/day.

Group 3: both drugs, same dose.

RESULTS: The therapeutic response evaluated in Hamilton Scale for Depression (HAM-D), Montgomery and Äsberg Depression Rating Scale (M.A.D.R.S.), Mini Mental State Examination (M.M.S.E.) and Global Clinical Impression (G.C.I.) scores during 18 months. In the third group who received the two drugs associated, had much better response than the others and "brain enhancer".

CONCLUSION: The group who received the association of the cholinergic agent Galantamine with antidepressant (SSRIs) Escitalopram had a relevant satisfactory therapeutic response: the best result, so there is a possible relation between the deficit in cholinergic systems and depression.

HYPOTHESIS: To evaluate the therapeutic response in patients with comorbility between Mild Cognitive Disorder and Depression in treatment with Galantamine (acetylcholinesterase inhibitor) with Escitalopram (Selective serotonin reuptake inhibitors) and the two drugs associated.

DISCUSSION: Could be cerebral cholinergic systems deficit a generator of Depressive Disorder?

**NO. 106**

**TREATMENT OF ADDICTION IN ALZHEIMER'S DISEASE: THE EFFICACY OF RATIONALE FOR COMBINATION THERAPY WITH GALANTAMINE AND MEMANTINE**

*Lead Author: Julio C. Zarra, M.D.*
*Co-Author(s): Luisa C. Schmidt, M.D.*

**SUMMARY:**

Introduction: Considering the moderate clinical state the Alzheimer´s Disease, without therapeutic response or poor therapeutic response with an anti dementia agent, we try improvement the therapeutic response with 2 drugs association.

Methods: The experience included 758 patients who were enrolled in a prospective, observational, multicenter, and open-label study to receive 16 mg/day of galantamine and 30 mg/day of memantine for 18 months of treatment of addition.

Results: The therapeutic response was measured using the Mini Mental State Examination (MMSE), Clinical Dementia Rating (CDR), Alzheimer's Disease Assessment Scale (ADAS-GOG), Functional Activities Questionnaire (FAQ) the Clinical Global Impression Scale (CGI) and the UKU scale of adverse effects. Taking into account the efficacy, safety and adverse events of the treatment during 18 months, the final results of the study showed that galantamine with addition memantine improve cognition, behavioural symptoms, and the general well-being of patients with cognitive impairment: Alzheimer's disease. The incidence of adverse events was not significant and a very good profile of tolerability and safety was observed.

Conclusion: At the conclusion of this session, we should be able to demonstrate with use the association memantine - galatamine in neurocognitive disorder: Alzheimer's disease, improve cognition, behavioural symptoms, and the general state recognized as neurocognitive disorder.

Hypothesis: The efficacy, safety, and tolerability of cholinergic agent: GALANTAMINE (with a dual mechanism of action on the cholinergic a system) and moderate affinity NMDA- receptor antagonist: MEMANTINE, were assessed taking into account the profile of patients with neurocognitive disorder: Alzheimer's disease, from the clinical aspects and the different classifications.

Discussion: Suggest that before Alzheimer´s Disease continues evolution to a severe state, the pharmacological use this association to slowing or stopping the dementia process.

**NO. 107**

**FREQUENCY OF DEPRESSION IN PATIENTS WITH DIABETES MELLITUS IN PAKISTAN**

*Lead Author: Muhammad W. Azeem, M.D.*
*Co-Author(s): Irum Saddique, MBBS, Imtiaz A. Dogar, MBBS, FCPS, Nighet Haider, MPhil, Samreen Afzal, MSc*

**SUMMARY:**

Background:

Studies have shown an association between depression and diabetes mellitus. There is little data in developing countries, such as Pakistan, regarding frequency of depression in patients with diabetes mellitus.

Objective:

The objectives of the study were: 1. To assess the frequency of depression in patients with diabetes mellitus. 2. To compare the severity of depression among patients taking insulin versus oral hypoglycemic medications.

Methods:

This was a prospective study conducted between January 2012 and June 2012 at an outpatient department of a tertiary care hospital in Pakistan. Participants were 70 patients (Males: 57% and Females: 43%) with diagnosis of diabetes mellitus. 50% were taking insulin and the other 50% oral hypoglycemic agents. Patients were interviewed according to ICD-10 criteria for depression. Informed consent was obtained. The study was approved by the Hospital Ethics Committee.

Results:

The age range of patients was between 30 and 55 years with 81% being married. 71% were from lower socioeconomic status and 29% from middle socioeconomic status. According to ICD-

10 criteria, depression was present among 53% of the patients. The severity of depression was: Mild 20%, Moderate 23% and Severe 10%. Among 35 patients on insulin, 31% had depression with following severity: Mild 9%, Moderate 11% and Severe 11%. Among 35 patients on oral hypoglycemic medications, 74% were depressed with following severity: Mild 31%, Moderate 34% and Severe 9%.
Conclusions:
1. The frequency of depression is higher in patients with diabetes mellitus.
2. Diabetic patients on oral hypoglycemic medications are at higher risk of developing depression as compared to patients on insulin (P value <.001).
3. Limitations of this study include small sample size and study being conducted at only one site.
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Key Words:
Diabetes Mellitus, Depression, Insulin, Oral Hypoglycemic Medications

**NO. 108**

**VOCAL CORD DYSKINESIA: A SYMBIOSIS OF THE PSYCHOLOGICAL AND PHYSIOLOGIC**

*Lead Author: Connie L. Barko, M.D.*
*Co-Author(s): Alyssa A. Soumoff, M.D.; Harold J. Wain, Ph.D.*

**SUMMARY:**
INTRODUCTION: Vocal cord dyskinesia (VCD) is defined as the inappropriate adduction of the vocal folds during inspiration. Once thought to be psychogenic in nature, VCD was classified as a conversion disorder. However, there is growing evidence for a physiological basis of VCD. This case report seeks to demonstrate a symbiotic, rather than antagonistic, relationship of the psychological and physiologic in VCD and to consider how this holistic perspective impacts treatment.
CASE DESCRIPTION: The patient is a twenty-one year old, male, collegiate wrestler. His first symptoms occurred while running for a physical aptitude test, during which he was not meeting his expectations. His throat felt constricted, he became short of breath, and he syncopized. When he returned to consciousness, he experienced a sense of wellbeing. Subsequent episodes increased in regularity: occurring multiple times a day, lasting hours, and only resolving after a loss of consciousness. Several emergency room visits led to an extensive workup. Although there was no specific medical diagnosis that could be identified, empiric treatment for asthma and acid reflux was initiated but found to be ineffective. His symptoms were eventually attributed to anxiety, so he was referred to a psychiatrist. He was started on citalopram without a significant change in the frequency or severity of episodes. After a laryngoscopy identified vocal cord dysfunction, the patient was referred to a hospital center that could provide a multidisciplinary approach of pulmonology, speech therapy, psychiatry, and psychotherapy. In combination, these interventions led to near resolution of his symptoms.
DISCUSSION: This case report illustrates several challenges to clinical encounters with VCD. Symptoms masquerade as asthma or organic upper airway obstruction, which confounds the initial recognition of VCD. Likewise, misdiagnosis can result in harmful therapy to include unnecessary intubation and tracheotomy. Once a diagnosis has been established, effective therapeutic control can be problematic because utilization of a single treatment modality often produces partial or no remission. All of these challenges increase the anxiety of the patient, who loses hope of regaining normalcy. Clinicians are also vulnerable to anxiety and demoralization when they cannot adequately manage patients.
CONCLUSION: This case report demonstrates how VCD can be examined using a biological-psychological-social formulation. A careful assessment of both physiologic and psychological factors helps shape a holistic approach to treatment and also improves outcomes. Because most current research highlights acute management of VCD, future study should be dedicated to long-term treatment and prognosis.

**NO. 109**

**TYPE A BEHAVIOR PATTERN IS ASSOCIATED WITH LOWER PLASMA CRP LEVELS IN DIABETIC PATIENTS**

*Lead Author: Jean-Christophe Chauvet-Gelinier, M.D., M.Sc.*
*Co-Author(s): Bruno Vergès, M.D., Ph.D., Benoit Trojak, M.D., Ph.D., Marie-Claude Brindisi, M.D., Ph.D., Eddy Ponavoy, M.D., Benjamin Bouillet, M.D., Ph.D., Vincent Meille, M.D., Malick Briki, M.D., Claude Grillet, M.D., Bernard Bonin, M.D.,Ph.D.*

**SUMMARY:**
Background and aims: Emerging evidence suggests that psychological determinants can
influence somatic diseases supporting the existence of fundamental pathways between psychosocial
stress and biological processes, particularly in disorders with chronic inflammation such as diabetes. In
this context, the impact of the type A behavior pattern as a specific emotional and behavioral coping
style on inflammation deserves attention.
Thus, the aim of our present study was to assess whether type A behavior may influence plasma levels
of CRP, a marker of inflammation, in diabetic patients.
Material and methods: The Departments of Psychiatry and Endocrinology-Diabetology conducted a
joint study between December 2010 and March 2013. Our observational study was conducted in
outpatients and hospitalized patients with type 1 or type 2 diabetes. We analyzed the influence of the A
or B behavior pattern, assessed by the Bortner scale on CRP plasma levels.
Results: 548 patients (292 men, 256 women) with type 1 or type 2 diabetes were included in the
study. The plasma CRP level was significantly lower in patients with fully-developed type A behavior
than in those with fully-developed type B behavior (4.53±3.57 vs. 7.14±7.09 mg/L, p=0.003). In
multivariable analysis, CRP level was independently associated

with BMI (β=0.205 p=0.001), log
HbA1c (β=0.154 p=0.009), the Bortner score (β=-0.153 p=0.009), log HDL-C (β=-0.141, p=0.20), and
depression (β=0.118 p=0.042)
Conclusions: We showed, for the first time, that in patients with diabetes, the type A behavior pattern
is independently associated with lower CRP levels. This reduced inflammation and oxidative stress
associated with type A personality may be beneficial. Further studies are needed to analyze the
potential benefit of the type A-related reduced CRP level on diabetic complications and to clarify the
mechanisms that may link psychological profiles and inflammation.

**NO. 110**

**MANAGEMENT OF MAJOR DEPRESSION IN A PATIENT WITH BLOOD DYSCRASIAS**

*Lead Author: Erika K. Concepcion, M.D.*
*Co-Author(s): David Edgcomb, M.D., Simona Goschin, M.D., Nancy Maruyama, M.D., Daniel Safin, M.D.*

**SUMMARY:**

Management of Major Depression in a Patient with Blood Dyscrasias
Introduction: Thrombocytopenia and other blood dyscrasias have been associated with use of antidepressants, such as Selective Serotonin Reuptake Inhibitors (SSRIs) and other psychotropic medications. However, limited data is available on the effects of antidepressants on individuals with pre-existing blood dyscrasias who will receive bone marrow suppressive chemotherapy treatment. We report on the treatment of a man with Acute Myeloid Leukemia meeting criteria for Major Depressive Episode.
Case Report: Mr. G is 48 year old man with a history of Major Depressive Disorder who presented with one week of fever, found to have a WBC count of 87 k/µl and platelets of 24 k/µl. Bone marrow biopsy revealed Acute Myeloid Leukemia, a conversion from Chronic Myeloid Leukemia diagnosed ten months prior. Bone-marrow suppressing treatment with idarubicin and cytarabine was planned. At time of consultation, the patient endorsed depressed mood, insomnia, anhedonia, lack of energy, difficulty in concentration, and loss of appetite. A brief review of the adverse drug effects on the online reference, Lexi-Comp did not reveal any contraindication to the use of mirtazapine for symptoms of insomnia, lack of appetite, and depressed mood in the context of his thrombocytopenia. The patient was started on mirtazapine 7.5mg at bedtime and received one dose. Concern for iatrogenic contribution to blood dyscrasia fueled a search of ovidMedline and PsycINFO on treatment of depression in this particular medically compromised population. Mirtazapine was discontinued as there were reports of mirtazapine associated thrombocytopenia. The patient was started on bupropion for depressed mood and decreased energy. Zolpidem was started for insomnia.
Discussion: We review the psychiatric literature on the relationship between antidepressants medications and various hematologic disorders. We discuss the risks and benefits which must be weighed when selecting antidepressants in the setting of acute blood dyscrasias.

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**NO. 111**

**ANTIPSYCHOTICS FOR THE TREATMENT OF DELIRIUM IN NON-ICU SETTINGS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS**

*Lead Author: Tomoya Hirota, M.D.*
*Co-Author(s): Taro Kishi, M.D., Ph.D., Sheryl Fleisch, M.D., Wesley Ely, M.D,, M.P.H.*

**SUMMARY:**

[Objective] Although antipsychotics (APs) have been used empirically to alleviate symptoms of delirium in acute hospital settings, there has been no confirming evidence to support their use. A recent clinical practice guideline by American College of Critical Care Medicine shows lack of evidence of APs for the treatment of delirium in ICU patients but no clinical practice guideline in non-ICU settings has been reported as of November 2013. Moreover, several randomized controlled trials investigating efficacy and safety of APs in non-ICU setting have been published since a previous systematic review by Cochrane group was published in 2007, which included only 3 studies and concluded no significant difference in the efficacy between haloperidol (HAL) and two second generation antipsychotics (SGAs), olanzapine (OLA) and risperidone (RIS). Thus, we conducted a systematic review and a meta-analysis to elucidate the efficacy and tolerability of APs in the treatment of delirium in non-ICU setting. [Methods] We searched MEDLINE, EMBASE, the Cochrane Library databases, CINAHL, and PsycINFO from inception to November 2013, using the following keywords: “antipsychotics” or each generic name of APs and “random” and “delirium.” The references of included articles and review articles in this area were also searched for citations of further relevant published and unpublished research. The primary outcome measure was severity of delirium, as measured using the highest scores of Delirium Rating Scale (DRS), DRS-Revised-98, and Memorial Delirium Assessment Scale. A 95% confidence interval (CI) and standardized mean differences (SMD) were used. [Results] Eleven studies (8 published and 3 conference abstracts) including 609 patients were identified. Among them, data from 9 studies were available for meta-analyses. Only one article was placebo-controlled study, comparing quetiapine (QUE) with placebo, which did not show significant difference between two groups in the reduction of severity of delirium. The rest of studies were head to head studies comparing different APs. There were no statistically significant differences between three SGAs, OLA, QUE, or RIS and HAL in

the reduction in severity of delirium (SMD=-0.02, CI: -0.27 to 0.24, p=0.89), and discontinuation due to any cause. Among SGAs, RIS showed comparable efficacy in decrease in severity of delirium with aripiprazole (ARI) and OLA (SMD=-0.18, CI: -0.68 to 0.32, p=0.49) and discontinuation due to any cause. [Conclusion] Our results showed no significant differences in both efficacy and tolerability between haloperidol and three SGAs (OLA, QUE, and RIS) as well as within three SGAs (RIS vs. ARI or OLA). Due to heterogeneity in patient populations and study design and quality, however, caution should be required when interpreting our results. Larger trials will need to occur to assist in establishing guidelines on true efficacy of APs in the treament of delirium in non-ICU setting.

**NO. 112**

**A CASE REPORT ON REVERSIBLE NEUROLOGICAL SEQUELAE OF LITHIUM TOXICITY**

*Lead Author: Mehr Iqbal, M.D.*
*Co-Author(s): Swarnalatha Yerrapureddy M.D., Chizoba Usuwa.*

**SUMMARY:**

Lithium a medication used to treat psychotic disorders had been known to cause neural toxicity at high plasma. Lithium affects ion transport and cell membrane potential by competing with sodium and potassium; these effects may alter neuronal function. According to literature there is evidence of both reversible and irreversible neurotoxicity in patients with high lithium plasma levels. Cases of reversible lithium neurotoxicity present clinically different from those of irreversible lithium neurotoxicity and have important implications in clinical practice. Since the range between therapeutic and toxic doses for lithium is very narrow, a close attention should be paid to the development of adverse reactions during its use. JC is a 42 year old male and had has a significant chronic history of bipolar disorder, seizure disorder and alcohol abuse. He was admitted to medical floor because of bizarre behavior and altered mental status. The patient increased his lithium dosage during a manic episode in efforts to stabilize his mood. His initial labs indicated elevated Lithium 5.6; BUN 78; Creatinine 7.4; TSH: 12. Blood glucose 121, a leukocytosis of WBC-40.9, neutrophil count of 65%, bands 14%. Sodium was 135mEq/L; Potassium was 3.1 mEq/L, Neurological exam showed aphasia, nystagmus, tremors of upper and lower extremity, and truncal ataxia. Improvement in his mental status was apparent by day 5 and was fully orientated on day 7 of admission. His lithium levels had his renal function was back to baseline. The prognosis of this particular case is significant because it is necessary to set specific criteria for differentiating between reversible and irreversible lithium toxicity. The original assumption was that our patient's condition ruled out reversibility. Severe lithium toxicity usually correlates with elevated serum levels, and patients often have CNS signs and symptoms. Our patient had features consistent with lithium toxicity, including confusion and lethargy, slurred speech, upper and lower tremors, nystagmus and gait difficulties. Improvement usually parallels the drop in serum lithium levels.This was not observed in our patient, on day 4 of admission his lithium levels were at .05 and he still had significant impairments.The prognosis of this particular case is significant because it is necessary to set specific criteria for differentiating between reversible and irreversible lithium toxicity. The original assumption was that our patient's condition ruled out reversibility. However, our patient fully recovered with no residual sequelae

**NO. 113**

**THE USE OF SYMPTOM SUBSTITUTION TO TREAT POSTTRAUMATIC FUNCTIONAL NEUROLOGICAL SYMPTOM DISORDER: A CASE STUDY**

*Lead Author: Sherrell Lam, M.D.*
*Co-Author(s): Harold Wain, PhD*

**SUMMARY:**

Introduction: Functional Neurological Symptom disorder (formerly conversion disorder in the DSM-IV) is characterized by symptoms of altered motor or sensory function, with clinical findings providing evidence of incompatibility between the symptom and recognized neurological or medical conditions. Studies suggest that trauma has a role in the development of functional neurological symptoms. Functional neurological symptom disorders pose diagnostic and treatment challenges and research indicates that in up to 33% of patients these disorders will become chronic, leading to significant disability. There is little data on the evaluation and management of post-traumatic functional neurological symptom disorder. We review the literature and through our case study discuss the role of hypnosis in the treatment of this condition.
Case: We present a male National Guard Infantryman with multiple prior deployments and no previous psychiatric history who was evacuated out of theater for abnormal jerking movements. After an extensive neurologic work-up, no medical etiology was revealed. After initially denying any psychiatric symptoms, the patient gradually began discussing gruesome events that occurred during deployment, in addition to panic and dissociative symptoms occurring in the context of traumatic triggers. Within the structure of regular psychotherapy, hypnosis was performed and the patient's jerking movements were substituted with finger snapping. After eight sessions, the patient noted a significant decrease in his abnormal movements and an improved ability to discuss his trauma.
Discussion: Inherent in the definition of functional neurological symptom disorder is an underlying psychic conflict, manifesting as a physical symptom. There is no consensus on the optimal treatment for this condition. We propose the use of hypnosis and symptom substitution as a way in to the well-defended patient. Under the support of a psychotherapeutic framework, the physician can decrease the patient's discomfort while continuing to understand the underlying issues.

**NO. 114**

**ANXIOUS AND DEPRESSIVE SYMPTOMS IN PATIENTS WITH AL AMYLOIDOSIS RECEIVING STEM CELL TRANSPLANT**

*Lead Author: Margot A. Phillips, M.D.*
*Co-Author(s): Janet E. Shu, M.D.,Fangui Jenny Sun, Ph.D.,John L. Berk, M.D.,David C. Seldin, M.D. Ph.D.*

**SUMMARY:**

Introduction: There is limited literature examining the prevalence and significance of anxiety and depression in patients being treated for systemic amyloidosis, complex diseases caused by protein misfolding that leads to progressive organ damage. Stem cell treatment and chemotherapy have extended patients' lifespans in this serious disease with poor prognosis.

Our study examines the prevalence of depression and anxiety symptoms in patients with AL amyloidosis and whether symptoms are correlated with organ involvement or other demographic factors.
Methods: Retrospective cohort study of 1413 patients diagnosed with AL amyloidosis and evaluated for stem cell transplantation at a specialized amyloidosis treatment center from 1993 to May 2013. Prevalence of self-reported depressive and anxious symptoms at time of intake was determined with the use of screening questions on the SF-36. Correlations with demographic factors were determined using Chi-Squared or Fisher's Exact tests.
Results: 1413 patients were evaluated; 60.9 % male, 39.1% female. The most common primary organ involvement was renal (N= 570; 49.2 %). Patients with any cardiac involvement numbered 487 (37.8%); (primary involvement: N= 273, 19.3 %; secondary involvement: N=214, 16.6%).
15.7% of patients reported significant anxiety symptoms and 12.3 % reported significant depression symptoms. An adverse impact on work or other activities as a result of feeling depressed or anxious was reported by 634 patients (50.2%). A significant correlation was observed between patients who had any (primary or secondary) cardiac involvement and depressive symptoms (N = 56, p = 0.03). There was no correlation between cardiac involvement and anxiety symptoms (N= 63, p= 0.86). Male sex and anxiety symptoms trended toward an association (p = 0.06), but did not reach statistical significance. No significant correlation was found between depression or anxiety symptoms by age, marital status, education status, or alcohol use.
Discussion: Our study demonstrates that significant depression and anxiety symptoms are common among patients with AL amyloidosis. Furthermore, these symptoms have an adverse impact on daily functioning in half of all patients.
There was a significant correlation between patients with cardiac involvement and depressive symptoms (p= 0.03). Anxiety was equally prevalent among patients of different organ involvement. Our results suggest that patients with cardiac amyloidosis may have an additional burden of depressive symptoms. Timely evaluation and treatment of depression and anxiety symptoms in patients with amyloidosis are critical for patient well-being. Future studies may elucidate the impact on quality of life and treatment outcomes.

**NO. 115**
**IMPROVING THE EFFECTIVENESS OF PSYCHIATRIC CONSULTATIONS IN A GENERAL MEDICAL HOSPITAL**
*Lead Author: Ann Schwartz, M.D.*
*Co-Author(s): Geetha Nampiaparampil, MD, Perry Seese, MD, Karthryn Johnson, MD, Constantine Galifianakis, MD*

**SUMMARY:**
Objective:
Adherence to treatment recommendations by consultees is one of the pillars of an effective psychiatric consultation, and poor adherence to treatment is a common problem in general hospital practice. The goal of this quality improvement project was to improve the effectiveness of our Psychiatric Consultation/Liaison (C/L) Service by reducing the instances where the consultees fail to adhere to our recommendations to fewer than 10%.
Method:
Adherence was defined as initiating medication and non-medication recommendations on the same calendar day as the consultation unless there was a documented reason not to, as well as keeping the patient on the medical service until they met psychiatric criteria for discharge. An initial chart review was completed to determine the baseline number of consultations that contained the essential elements of an effective consultation described above. The causes of failure to follow the recommendations were investigated. Tests of change were initiated which included the consult team calling the consultee before completing the consultation to clarify the consult question as well as calling after the consultation to communicate the treatment recommendations. In addition, the consultation template in the electronic medical record (EMR) was modified to include a statement documenting the communications regarding the treatment with the primary medical and surgical teams to reinforce the importance of this communication to our C/L team members.
Results:
A baseline chart review indicated that only 42% of the consultations contained all of elements of an effective consultation. Following changes in our communication to the consultees, consultations were tracked prospectively to determine whether the recommendations were being followed. In the event that the recommendations were not followed, the consult team recorded whether there was a documented reason in the chart indicating why they were not initiated and contacted the consultee directly to inquire about why the recommendations were not followed. Following modifications in our work flow that included contacting the consultee before and after the consultation, 65% of the consultations contained all of the elements of an effective consultation.
Conclusions:
Changes in the communication with consultees were initiated and included direct communication to the consultees by telephone regarding treatment recommendations in addition to the documentation in the consult note in EMR. Following these changes, adherence to our recommendations increased from 42% to 65%. Our initial findings suggest that psychiatric consultants can greatly increase the adherence to recommendations by directly communicating with the consultees.

**NO. 116**
**POSTTRAUMATIC STRESS, DEPRESSION, AND CANCER-RELATED SYMPTOMS IN RENAL CELL CARCINOMA**
*Lead Author: Seema Thekdi, M.D.*
*Co-Author(s): Kathrin Milbury, PhD, Amy Spelman, PhD, Qi Wei, MS, Lorenzo Cohen, PhD*

**SUMMARY:**
Background: A diagnosis of cancer may precipitate symptoms of depression and posttraumatic stress (PTS). Our understanding of PTS symptoms in the cancer setting lags behind what we know about depression, although prevalence estimates are comparable. The association between depression and cancer-related symptoms, including fatigue and sleep disturbance, is well established. How the presence of PTS symptoms factors into cancer-related symptoms has not been examined. Thus, we were interested in the association between PTS and cancer-related symptoms in patients with renal cell carcinoma (RCC).

Additionally, we sought to identify the prevalence of comorbid depressive and PTS symptoms and examined if those with comorbid psychiatric symptoms are more vulnerable to cancer-related symptoms than those with depressive or PTS symptoms alone.
Method: Data presented involve baseline assessments of a large randomized controlled trial evaluating the benefits of an expressive writing intervention on quality of life outcomes. Patients (n=253) with stage I-IV RCC completed self-report measures including depressive symptoms (CES-D), PTS (IES), cancer-related symptoms (MDASI), fatigue (BFI), and sleep disturbance (PSQI) prior to receiving systemic treatment.
Results: Of the baseline sample, 49% (n=125) reported psychiatric symptoms with 17% (n=44) reporting comorbid clinical levels of depressive and PTS symptoms; 27% (n=69) PTS symptoms alone; 5% (n=12) depressive symptoms alone; and 51% (n=128) reporting no psychiatric symptoms. Controlling for age, gender and stage of disease, a priori contrast comparisons revealed that patients with PTS symptoms alone reported more cancer-related symptoms (P=.006), fatigue (P=.007), and sleep disturbance (P=.06) than those who did not report any psychiatric symptoms. Importantly, those with comorbid clinical levels of PTS and depressive symptoms reported significantly more cancer-related symptoms (P<.0001), fatigue (P<.0001), and sleep disturbance (P=.0003) than those with PTS symptoms alone, and significantly more cancer-related symptoms (MDASI; P=.002) and marginally more fatigue (BFI; P=.09) than those with depressive symptoms alone.
Conclusion: PTS symptoms were reported at a high rate and were associated with higher cancer-related symptom burden, with comorbid PTS and depressive symptoms resulting in the worst outcomes. These findings underscore the importance of identifying PTS symptoms in cancer patients with the need to further study and identify screening and intervention strategies.

**NO. 117**

**PSYCHIATRIC, DEMOGRAPHIC AND LEGAL PREDICTOR VARIABLES IN COMPETENCY TO STAND TRIAL DETERMINATIONS**

*Lead Author: Cheryl Paradis, Psy.D.*
*Co-Author(s): Cheryl M. Paradis, Psy.D., Elizabeth Owen, Ph.D., Linda Z. Solomon, Ph.D., Ben Lane, B.A., Chinmoy Gulrajani, M.D., Michael Fullar, M.D., Alan Perry, Ph.D., Sasha Rai, M.D., Tammy Levi, M.D.*

**SUMMARY:**

Introduction: This study assessed psychosocial and legal characteristics of 200 defendants referred for competency to stand trial (CST) evaluations.
Methods: Data were examined from an archival sample of CST reports.
Results/Conclusions: Fifty-seven defendants were immigrants and 18 were seen with interpreters. One hundred-and-six were charged with felonies. The examiners diagnosed 114 with psychotic disorders and opined that 104 were incompetent. Compared to those deemed competent, the defendants deemed incompetent had a significantly higher rate of psychiatric hospitalizations (80% vs 63%), $\chi 2$ (1, N =199) = 6.81, p = .007) and psychotic diagnoses (72% vs 41%), $\chi 2$ (1, N = 200) = 19.58, p = .000) and significantly lower incidence of reported substance abuse (58% vs 79%), $\chi 2$ (1, N = 200) = 10.58, p = .001.) There was a trend towards significance for defendants seen with interpreters to be deemed not competent compared to those who did not need interpreters.

**NO. 118**

**DEVELOPING AND EVALUATING A WEB-BASED PATIENT REPORTED OUTCOMES AND DECISION SUPPORT TOOL (MYPSYCKES)**

*Lead Author: Elizabeth Austin, M.P.H.*
*Co-Author(s): Laura Bartkowiak, M.P.H., Molly Finnerty, M.D., Abbey Hoffman, M.S., Edith Kealey, M.S.W., Emily Leckman-Westin, Ph.D., & Krithika Rajagopalan, Ph.D.*

**SUMMARY:**

Background: Patient reported outcomes and shared decision-making are two related strategies for promoting patient centered care. Web-based tools hold the promise of improving quality of care, but little data is available on the use and impact of such systems in mental health, particularly for individuals with serious mental illness. MyPSYCKES combines these elements for use in the outpatient setting. We describe the MyPSYCKES program and evaluation, and will allow participants to log on and interact with the web-based application. Project Description: MyPSYCKES is a bilingual web-based application developed by the New York State Office of Mental Health (NYS OMH) to strengthen patients' ability to participate in clinical decision-making. Before each medication appointment, patients use the MyPSYCKES program in their clinic with the assistance of peer staff, answering questions about their use of wellness activities and medications, symptoms and status, medication concerns, personalized health risks, and goals for treatment. MyPSYCKES produces a one-page report that synthesizes their answers and aggregates data from previous visits to show trends over time. The patient and physician use this report in session and develop a shared decision about next steps in treatment. Our team developed the beta version of the MyPSYCKES program in 2010 and piloted the program in two outpatient clinics in 2011. After conducting usability testing and developing robust training and implementation protocols, we expanded the program to ten additional sites statewide. Research Methodology: Guided by a diverse Stakeholder Advisory Committee that included patients, clinicians, researchers, policymakers, and payers of care, we developed an extensive evaluation protocol for MyPSYCKES. The research involves several methods of data collection to address the questions of interest prioritized by stakeholders, such as pre/post semi-structured interviews, recording of medication visits, application usability testing, participant observation of program use, focus groups, and a review of charts and Medicaid data. As determined through our work with the Stakeholder Advisory Committee, the evaluation will focus on the following priority outcomes: 1) patient empowerment, activation and health outcomes, 2) changes in clinical discussions and decision-making processes, 3) greater inclusion of patient preferences in records, 4) program use by different groups, and 5) implementation best practices. Discussion: The MyPSYCKES evaluation will provide important information about the usability of such a system for individuals with SMI and other vulnerable subgroups, as well as critical information on the value and impact of patient reported outcomes and shared decision-making on

patient activation, engagement in care, and health outcomes. These data will help guide patients, families, providers, payers, and systems of care on investment decisions for future practices methodologies.

**NO. 119**

**CARIPRAZINE DEMONSTRATES GREATER POTENCY THAN ARIPIPRAZOLE IN ANIMAL MODELS OF PSYCHOSIS, COGNITIVE IMPAIRMENT, AND NEGATIVE SYMPTOMS**

*Lead Author: Nika Adham, Ph.D.*
*Co-Author(s): István Gyertyan, Ph.D., Béla Kiss, M.Sc.*

**SUMMARY:**

Background: Antipsychotics have shown strong efficacy in treating the positive symptoms of schizophrenia but limited efficacy in treating negative symptoms, cognitive impairment, and depressed mood. Aripiprazole is the only dopamine D2 receptor partial agonist currently approved for the treatment of schizophrenia. Cariprazine is also a D2 receptor partial agonist antipsychotic candidate but differs from aripiprazole in that it has relatively higher D3 receptor affinity and selectivity. D3 receptors are thought to play a role in the regulation of cognition and mood and blockade of this receptor may be beneficial in treating the negative, cognitive, and mood symptoms associated with schizophrenia. We compared the potencies of cariprazine and aripiprazole across a number of animal paradigms that model the different symptom domains of schizophrenia.
Methods: Established rodent models of psychosis, cognitive impairment, and negative symptoms/depression were used to evaluate the effects of cariprazine and aripiprazole at various doses in rats and mice. Differences in potency between the 2 compounds on each model were estimated using ED50 values or minimal effective doses (MED).
Results: Cariprazine occupied D2 receptors in rats with approximately 30-fold greater potency than aripiprazole (ED50: cariprazine, 0.23 mg/kg; aripiprazole, 7.7 mg/kg); potency for D3 receptor occupancy in rats was >70-fold higher for cariprazine vs aripiprazole. In rat models of antipsychotic-like activity, cariprazine demonstrated 20 to 30-fold greater potency than aripiprazole (ED50 for conditioned avoidance response: cariprazine, 0.8 mg/kg, aripiprazole, 18 mg/kg; ED50 for amphetamine-induced motor activity: cariprazine, 0.12 mg/kg; aripiprazole, 3.9 mg/kg). In comparison, cariprazine showed much greater differences in potency relative to aripiprazole in the models of cognitive impairment (cariprazine was 25 to >250-fold more potent) and negative symptoms/depression (cariprazine was 85 to 100-fold more potent).
In mice, cariprazine was approximately 4-fold more potent than aripiprazole in the apomorphine-induced climbing model of antipsychotic-like activity (ED50: cariprazine, 0.27 mg/kg; aripiprazole, 0.97 mg/kg) but it was 100-fold more potent than aripiprazole in cognitive impairment models and 25 to 50-fold more potent in models of negative symptoms/depression.
Conclusion: Cariprazine showed greater potency than aripiprazole across a number of animal models that represent different aspects of schizophrenia. Interestingly, the potency differences varied widely across models. The greatest differences in potency between cariprazine and aripiprazole were seen in models of cognitive impairment and negative symptoms/depression. The high affinity of cariprazine at D3 receptors may underlie the greater potency relative to aripiprazole in models of cognitive impairment and negative symptoms. This study was funded by Forest Laboratories, Inc. and Gedeon Richter Plc.

**NO. 120**

**ECT FOR NEGATIVE SYMPTOMS IN PATIENTS WITH SCHIZOPHRENIA: DATA FROM A TERTIARY PSYCHIATRY CLINIC**

*Lead Author: Cana Aksoy Poyraz, M.D.*
*Co-Author(s): Gizem Çetiner Batun,M.D., Nazife Gamze Usta, M.D., Armağan Özdemir,M.D., Burç Çağrı Poyraz, M.D., Alaattin Duran, M.D.*

**SUMMARY:**

Abstract
Background: :ECT has been shown to be an effective treatment for patients with schizophrenia presented with catatonia, depression, mania and other prominent affective features. ECT is currently underused in many psychiatric settings due to the stigmatized perception of patients, their families and mental health professionals.
Aim: The aims of the study were to describe the indications for ECT among patients admitted with acute psychotic episode to a tertiary psychiatric department in Turkey. We also aimed at assessing whether patients with schizophrenia who received ECT differed in their clinical history, diagnosis, severity of illness, psychopathology, and duration of hospital stay, compared to patients who did not receive it.
Methods: This was a naturalistic prospective study of 32 patients admitted with acute exacerbation of psychosis, 8 (25 %) of which received ECT. The sociodemographic details, past psychiatric history, comorbid personality, and substance use details were recorded by a semi-structured interview method. Clinical diagnosis was confirmed by two consultant psychiatrists based on DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders). Psychopathology was assessed within 3 days of admission and just prior to discharge using the Positive and Negative Syndrome Scale (PANSS). Total duration of the stay in the hospital was also recorded.
Results: In patients who received ECT (n=8) the major indication was to augment pharmacotherapy. Drug choice was similar between groups. Duration of hospitalization was longer in the ECT group compared to teh group of patients which didn't receive ECT (mean: 34 days vs 26, p=0.04). Severity of negative symptoms in admission was significantly higher in patients who received ECT (33.7 vs 27, p=0.025, u:83). The decrease in negative symptoms between admission and discharge was higher in ECT group, although the difference didn't reach statistical significance (mean:17 in ECT group versus 11.3 in non-ECT group, p=0.1).
Conclusion: This preliminary study indicates a preference among treating physicians for ECT in the presence of more severe negative symptoms in schizophrenia. Also, further studies aiming to test whether ECT could be effective in ameliorating the negative symptoms in schizophrenia might be warranted.

**NO. 121**

**PALIPERIDONE RESEARCH IN DEMONSTRATING EFFECTIVENESS (PRIDE): FUNCTIONING IN SUBJECTS WITH SCHIZOPHRENIA AND A HISTORY OF INCARCERATION**

*Lead Author: Larry Alphs, M.D., Ph.D.*
*Co-Author(s): Lucy C. Mahalchick, B.S., Lian Mao, Ph.D., H. Lynn Starr, M.D.*

**SUMMARY:**
Background: Patient functioning deficits are a significant issue in schizophrenia (SCZ), with up to two-thirds of patients unable to fulfill basic social roles and less than one-third able to work regularly. Relapses in SCZ are highly prevalent, with progressive clinical deterioration associated with each relapse. Factors affecting relapse risk, including the impact of patient functioning on critical patient outcomes, have not been fully elucidated. This analysis examines the impact of baseline patient functioning on treatment failure in subjects with SCZ and a history of criminal justice system (CJS) involvement who were receiving antipsychotic treatment.
Methods: This analysis utilized blinded data from the Paliperidone Research in Demonstrating Effectiveness (PRIDE) study, an ongoing, 15-month, randomized, open-label, rater-blinded, parallel-group, multicenter US study comparing paliperidone palmitate (PP) with oral antipsychotics in a community sample of subjects with SCZ recently released from incarceration (NCT01157351). Primary endpoint was time to treatment failure (TTF; defined as arrest/incarceration, psychiatric hospitalization, suicide, treatment discontinuation or supplementation due to inadequate efficacy, safety, or tolerability, or increased psychiatric services to prevent hospitalization). Cumulative distribution function of TTF was estimated by the Kaplan-Meier (K-M) method. Differences in overall subject functioning were measured as a secondary endpoint using the Personal and Social Performance Scale (PSP). Subjects were grouped for assessment according to baseline PSP 1–30 (poor functioning), 31–70 (variable functioning), and 71–100 (good functioning).
Results: This analysis included 446 subjects, 18 (4%) of whom had baseline PSP 1–30, 388 (87%) PSP 31–70, and 40 (9%) PSP 71–100. Mean (SD) age (in years) of PSP 1–30, 31–70, and 71–100 cohorts was 34.4 (9.6), 38.0 (10.5), and 41.1 (9.9), respectively; 83.3%, 86.3%, and 85.0%, respectively, were male. The percentage of subjects who were Caucasian in the PSP 1–30, 31–70, and 71–100 cohorts was 72.2%, 32.2%, and 27.5%, respectively. The K-M median (95% confidence interval [CI]) of TTF was 271 (67, NR), 291 (221, 398), and 339 (132, NR) days in the PSP 1–30, 31–70, and 71–100 cohorts, respectively; differences between groups were not significant.
Conclusions: Our analysis did not show a clear association between baseline functioning and time to treatment failure in subjects with SCZ with a history of CJS involvement. A large proportion of subjects in this trial were in the intermediate functioning group (PSP 31–70), which was considered to be a limitation of the analysis.
Support: Janssen Scientific Affairs, LLC

**NO. 122**

**APPLICABILITY OF MONTREAL COGNITIVE ASSESSMENT (MOCA) IN THE CONTEXT OF PEOPLE WITH SCHIZOPHRENIA ON AN OUTPATIENT BASIS**

*Lead Author: Luana B. Araújo, O.T.*
*Co-Author(s): Cintia Pontin Carrareto Melo, O.T., M., Fábio Gomes de Matos e Souza, M.D., PhD.*

**SUMMARY:**
Schizophrenia is a chronic psychotic disorder of unknown etiology that causes cognitive impairment , affecting behavior , thinking and social function. Cognitive functioning is an important aspect , although it is still an undervalued dimension of schizophrenia , typically characterized by symptoms of psychopathology ( positive and negative ) , affective flattening and anhedonia . Aim of the study : to analyze the applicability of the Montreal Cognitive Assessment ( MOCA ) in the context of people with schizophrenia in outpatient clinics. Cross sectional study of nonrandom convenience sampling , performed at the outpatient mental health in a general hospital between April-July 2012. Two sample groups : a group of people with schizophrenia while a control group. Stability of symptoms ( PANSS score with a maximum of 60 points ) ; ; indicative of cognitive changes the first people diagnosed with schizophrenia followed up on an outpatient basis , both sexes , between 19 and 50 years old , minimum of four years of education were included ; stable clinical condition , who agreed to participate in the study . The control group consisted of 42 people from different educational backgrounds . Comparative analysis and construction of the tables were performed using SPSS v.19.0 and Microsoft Excel 2010 . The chi -square ( $x^2$ ) with correction of Fisher's exact test was used to compare categorical variables , such as gender ( male and female) and percentage of subjects with normal MoCA ( total score ≥ 26 ) . The Student's t- test , Mann- Whitney test or were used to compare continuous variables such as the mean total and specific test MoCA scores in the different groups ( schizophrenics and controls ) . The level of statistical significance was 0.05 . Regarding the demographic characteristics of the sample groups ( schizophrenics and controls ) did not differ significantly according to the Student t test for independent samples , according to gender ( Pearson $x^2$ = 1.718 , p = 0.27 ) , the mean age ( t = 1.680 , df = 82 , p = 0.07) and mean years of education ( t = -1.283 , df = 78 , p = 0.20 ) . results show the MoCA as a potential tool for easy application to screening for cognitive impairment in this population . A larger study involving the diagnosis of MCI and dementia is necessary to determine the characteristics of the MoCA accurate performance in people with schizophrenia.

**NO. 123**

**EARLY RESULTS OF HEALTHCARE UTILIZATION OUTCOMES IN PATIENTS DIAGNOSED WITH SCHIZOPHRENIA PARTICIPATING IN REACH OUT STUDY**

*Lead Author: Carmela J. Benson, M.S.*
*Co-Author(s): Carmela J. Benson, MS, David Biondi, DO, John M. Fastenau, RPh, MPH, Paul L. Juneau, MS*
*Jessica Lopatto, PharmD, Xue Song, PhD*

**SUMMARY:**
Objective: To evaluate inpatient admission and emergency room (ER) visits during the first six-months of study participation among patients with schizophrenia treated with paliperidone palmitate long-acting injection (PP) or oral atypical antipsychotic therapy (OAT).
Methods: Data were obtained from the Research and Evaluation of Antipsychotic Treatment in Community Behavioral Health Organizations, Outcomes (REACH OUT) study, an ongoing, naturalistic, observational study of adult patients receiving atypical antipsychotic treatment in community behavioral health organizations for either schizophrenia or bipolar I disorder. For this analysis, patients with schizophrenia receiving either PP or OAT were included. To account for the selection bias, propensity matching was performed estimating the

likelihood of receiving PP treatment accounting for covariates such as age, gender, insurance type, comorbidities, and baseline healthcare resource utilization (6-months prior to study enrollment). Utilization measures evaluated were inpatient admission and ER visits during the first 6-months. Descriptive statistics and relative reductions in utilization measures from baseline were compared between the matched PP and OAT treated patients. Within PP treated patients, we examined the proportion of new or continuing users of PP and their healthcare utilization at months 6.
Results: Out of the 412 analyzable patients treated with PP and 264 treated with OAT, 190 PP were matched 1:1 to 190 OAT. Post-matching, the two cohorts were comparable based on age (41.2 vs. 40.9, P=0.816), gender distribution (68.9% vs. 65.3% male, P=0.431), ≥1 baseline inpatient admission (29.5% vs. 33.2%, P=0.413), or ≥1 baseline emergency room visits (34.7% vs. 38.4%, P=0.430). In the 6-months follow-up period, PP patients had a nominally greater reduction in healthcare utilization from baseline compared to OAT patients in both ER visits (47.2% vs. 33.2%) and inpatient admissions (50.0% vs. 44.2%). Within the PP cohort, 41% are new to PP and 59% are continuous users of PP and a lower percentage of new PP users had inpatient (6% vs 10%) or ER admission at 6-months (8% vs 14%).
Conclusions: Among a matched cohort of patients diagnosed with schizophrenia, this analysis at 6 months demonstrated a reduction in healthcare utilization associated with paliperidone palmitate long-acting injectable vs oral atypical antipsychotics. Further evaluation of this treatment comparison over a longer term is warranted.

**NO. 124**

**PREVALENCE OF SEXUAL DYSFUNCTION IN PATIENTS WITH SCHIZOPHRENIA TREATED WITH ANTIPSYCHOTIC MEDICATIONS IN KOREA**

*Lead Author: Jinhyuk Choi, M.D.*
*Co-Author(s): Baek Dae-up, M.D.*

**SUMMARY:**

Objectives:
Sexual dysfunction (SD) is estimated to affect 30-80% of patients with schizophrenia and is a major cause of negative attitudes toward therapy, treatment non-compliance, and poor quality of life. SD has been underestimated and rarely considered by clinicians and researchers. To the best of our knowledge, few studies have reported the prevalence of SD in patients with schizophrenia in a Korean population. The aim of this study was to estimate the prevalence of SD in Korean patients with schizophrenia treated with antipsychotic medications, compared to healthy controls.
Methods:
We employed a cross-sectional, case-controlled survey design to collect data from outpatients with schizophrenia who were stabilized on antipsychotic treatments for at least three consecutive months and healthy volunteers. We assessed SD with the Arizona Sexual Experience Scale (ASEX); the criterion for SD is a total ASEX score ≥ 19, any one item with a score ≥ 5, or any three items with a score ≥ 4. We conducted a chi-square test for categorical variables and independent sample t-test for continuous variables.
Results:
Seventy-eight of 101 patients (77.2%) who were enrolled in the study and 77 healthy controls completed the ASEX. The prevalence of SD in the patient group was 56.4%, while that of the healthy group was 23.4% ($\chi^2$ = 17.618; P < 0.01). Sixty-four patients (82.1%) had no sexual intercourse in the last three months, compared with 8 (10.4%) healthy volunteers ($\chi^2$ = 85.594; P < 0.01). SD was more common in female patients than male patients (81.8% vs. 46.4%; $\chi^2$ = 8.045; P < 0.01); however, more female patients had sexual intercourses in the last three months (36.4% vs. 5.4%; $\chi^2$ = 15.307; P < 0.01). No significant differences were found in the prevalence of SD among risperidone, olanzapine, aripiprazole, amisulpride, clozapine, other antipsychotic monotherapy, clozapine polypharmacy, or non-clozapine antipsychotic polypharmacy groups ($\chi^2$ = 6.953; P = 0.434). Among the patients treated with antipsychotic monotherapy, patients who took antipsychotics with a high affinity to dopamine D2 receptor (i.e., risperidone, olanzapine, amisulpride, haloperidol, paliperidone, perphenazine, and zotepine) had a higher prevalence of SD (68.0%) than those who took antipsychotics with a low affinity to D2 receptor (i.e., clozapine, quetiapine) and partial agonist aripiprazole (48.4%). No significant differences were observed ($\chi^2$ = 2.174; P = 0.140).
Conclusions:
This study demonstrated a prevalence of SD in Korean schizophrenia patients. D2 affinity of antipsychotics might be related to SD and clinicians should consider the differential effects on SD when prescribed antipsychotics. Although the prevalence of SD in female patients was higher than male, their sexual experience was more common. This might imply that some female patients were forced to have unwanted sex.

**NO. 125**

**THE RELATIONSHIP BETWEEN SOCIAL SKILLS DEFICITS AND EMPATHY TO EMOTIONAL PAIN IN SCHIZOPHRENIA**

*Lead Author: Silvia Corbera, Ph.D.*
*Co-Author(s): Kevin Cook, M.A., Sophy Brocke, B.A., Sabra Dunn, B.A., Bruce E. Wexler., M.D., Michal Assaf, M.D.*

**SUMMARY:**

Introduction
Social dysfunction is one among the most debilitating aspects of schizophrenia (SZ). Empathy is a multidimensional construct crucial for successful social interactions and is described as having two components: affective (early-automatic) and cognitive (late-controlled). In a previous study, our group examined these components using Event-Related Potentials (ERPs) in an empathy for physical pain paradigm. We found that patients with SZ showed a decreased early-affective response and a deficit modulating the late-cognitive one. In this present study we expand our work and examine these empathic components in a novel context: observing somebody in emotional pain.
Methods
In this conference I will expand preliminary ERP and behavioral data gathered from 9 SZ and 12 and healthy controls (HC). Participants viewed pictures depicting individuals either in an emotionally painful or neutral situation during two conditions: Pain Judgment Condition (PC): participants decided whether the person was in emotional pain; and Gender Judgment Condition (GC): participants chose the gender of person.
Results:
SZ had difficulties identifying painful stimuli (stimuli x group= F(1, 18)=5.22; p=0.035), especially in the PC (stimuli x condi-

tion x group: F(1, 18)=6.25; p=0.022). Groups did not differ in reaction time although both responded slower with painful stimuli in the GC (stimuli x condition: F(1, 18)=16.50; p=0.001). Although groups differed in a variety of social cognition measures (e.g., quality of life, emotion recognition and regulation and social competence; p values range 0.042 to <0.001), just social competence strongly correlated with the ability to accurately discriminate painful than non-painful stimuli, especially in the PC condition (Pearson Correlation r = 0.536; p= 0.015). This unique relationship suggests that deficits in the ability to accurately identify whenever a person is in emotional pain may play an important role for successful social interactions.
Conclusions:
Overall, SZ appear to have deficits in recognizing when a person is in emotional pain. These deficits could explain their known inability to establish and maintain social relationships. A comparison of the paradigms will be presented as well as implications for treatment.

**NO. 126**

**EARLY IMPROVEMENT PREDICTS ENDPOINT RESPONSE TO LURASIDONE IN SCHIZOPHRENIA: POOLED ANALYSIS OF FIVE DOUBLE-BLIND TRIALS**

*Lead Author: Christoph U. Correll, M.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Robert Goldman, Ph.D., Jay Hsu, Ph.D., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D.*

**SUMMARY:**
Introduction: Early improvement following initiation of treatment is a potentially important predictor of subsequent response that has clinical implications for the successful management of schizophrenia (1, 2). The goal of this pooled completer analysis was to evaluate the clinical value of early improvement in the PANSS total score and the CGI-Severity score as predictors of response to 6 weeks of treatment with lurasidone in patients with an acute exacerbation of schizophrenia.
Methods: Data were pooled from 5 similarly designed, six-week, double-blind, placebo-controlled trials of patients hospitalized with an acute exacerbation of schizophrenia who were randomly assigned to fixed, once-daily doses of lurasidone 40-80 mg (n=404) or 120-160 mg (n=264), or placebo (n=280). Endpoint responder rates were calculated using the ≥40% reduction from Baseline in PANSS total score criteria. Early improvement was separately assessed at weeks 1, 2, and 3 using two criteria (CGI-Severity ≥1-point improvement; PANSS improvement ≥20%). Calculations were made of sensitivity and specificity. Receiver operating characteristic (ROC) curves were used to determine the optimal cut-scores for prediction of endpoint response, based on the highest area under the curve (AUC).
Results: In the combined lurasidone dose groups, the proportion of subjects showing early improvement was similar for the PANSS ≥20% criterion and the CGI-S ≥1 criterion, respectively, at week 1 (32.5% and 36.1%) and week 2 (53.8% and 59.8%); but was lower at week 3 for the PANSS ≥20% criterion (70.7% and 88.0%). Endpoint response in the lurasidone group was 50.2% using PANSS 40% responder criteria. For prediction of endpoint response (using the PANSS 40% criterion), PANSS ≥20% improvement at week 1 had 46.6% sensitivity, 81.6% specificity, and AUCROC =0.660. CGI-S improvement ≥1 at week 1 had 46.2% sensitivity, 74.0% specificity , and AUCROC =0.621. At week 2, PANSS ≥20% improvement had 75.2% sensitivity, 67.8% specificity, and AUCROC =0.733. CGI-S improvement ≥1 at week 2 had 74.4% sensitivity, 54.8% specificity , and AUCROC =0.650. At week 3, PANSS ≥20% improvement had 91.9%, sensitivity 50.5% specificity, and AUCROC =0.730. At week 3, CGI-S improvement ≥1 had 87.3% sensitivity, a 43.7% specificity, and AUCROC =0.656.
Conclusions: Lack of PANSS improvement at Week 3 was highly predictive of non-response at Week 6. These data are consistent with prior studies with other antipsychotics where lack of early improvement predicted endpoint non-response. Since these results are based on group means, individual response trajectories require further study and should be considered in the clinical decision making and individualization of care in patients with chronic schizophrenia.
References
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**NO. 127**

**CEREBELLAR VERMIS HYOPLASIA AND MIDBRAIN ELONGATION IN A PATIENT WITH SCHIZOPHRENIA:
A CASE REPORT WITH NEUROBIOLOGICAL CORRELATIONS TO SYMPTOMS**

*Lead Author: Damon DeLeon, M.D.*
*Co-Author(s): Toral Desai, MBBS; Derek S. Mongold, MD*

**SUMMARY:**
The diagnosis of schizophrenia is currently limited to adherence to specific criteria within the DSM-V given the lack of any known universally expressed, quantifiable marker of the disease. However, some researchers believe that what we currently recognize as schizophrenia may actually represent a heterogeneous group of syndromes linked by a common error in pathophysiology and/or genetic susceptibility to environmental assaults. Abnormalities in various brain structures including the frontal and temporal cortices have long been proposed to underlie schizophrenia with more recent research targeting the role of the midbrain and cerebellum with particular attention paid to the cortico-cerebellar-thalamic-cortical circuit (CCTCC) and its role in cognitive dysmetria. A leading theory postulates that schizophrenia is a neurodevelopmental disorder resulting from errors in neuronal migration, synaptogenesis, myelination, and pruning. Various genetic loci have been associated with schizophrenia. Of particular interest is the locus 6q23.3 encoding the AHI1 gene which has been identified both as a schizophrenia susceptibility gene and the cause of Joubert Syndrome (an autosomal-recessive disorder characterized by cerebellar abnormalities similar to those associated with schizophrenia, neuro-opthalmologic abnormalities, mental retardation, hypotonia, hyperpnea, and apnea). AHI1 thus uniquely provides a bridge between the genetics and abnormal brain morphology in schizophrenia. Here, we present a case of schizophrenia in a patient with brain morphology suggestive of Joubert Syndrome. This case report lends itself particularly well to the discussion of schizophrenia as a neurodevelopmental disorder. The hypoplasia, heterotopia, and polymicrogyria in our case provide gross evidence for errors in such processes as neuronal migration, synaptogenesis, myelination, and pruning. The possibility of a link between our patient's psychosis,

brain morphology, and suspected syndromic illness is not only academically intriguing but also lends further support to the hypothesis that schizophrenia may be a heterogeneous group of neurodevelopmental disorders.

**NO. 128**

**CATEGORICAL IMPROVEMENTS IN DISEASE SEVERITY IN SCHIZOPHRENIA PATIENTS TREATED WITH CARIPRAZINE**

*Lead Author: Suresh Durgam, M.D.*
*Co-Author(s): Marc Debelle, M.D., Ph.D., István Laszlovszky, Pharm.D., Ph.D., Kaifeng Lu, Ph.D., Stephen Volk, M.D., Stephen Zukin, M.D.*

**SUMMARY:**

Background: Schizophrenia is a severe mental illness characterized by a diverse set of symptoms that can lead to patient distress, functional impairment, and poor quality of life. Reducing the overall severity of illness and improving global functioning is an important treatment goal. While symptom specific scales, such as the Positive and Negative Syndrome Scale (PANSS), evaluate symptom severity more broad assessments like the Clinical Global Impression-Severity (CGI-S) scale allows for evaluation of overall disease severity including symptom intensity, patient functioning, and quality of life.

Cariprazine is an orally active and potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. Cariprazine was effective and generally well tolerated in 3 phase II/III studies in patients with schizophrenia. In this pooled analysis, the effect of cariprazine on overall disease severity was evaluated by measuring clinically relevant shifts in CGI-S scores.

Methods: Data were pooled from 3 positive, Phase II/III, double-blind, placebo-controlled trials in patients with acute exacerbation of schizophrenia (NCT00694707, NCT01104766, NCT01104779). All cariprazine dose groups were combined for analyses (cariprazine dose range, 1.5 to 9 mg/day). The secondary efficacy parameter in all 3 studies was change from baseline in the CGI-S. In this post hoc analysis, improvements in global disease severity at Week 6 were assessed by analyzing the proportion of patients shifting from a baseline CGI-S score of ≥6 (severely ill or worse) to endpoint score of ≤3 (mildly ill or better). Additional analyses included CGI-S score shifts from ≥5 (markedly ill or worse) to ≤2 (borderline ill/normal). Data were analyzed using a logistic regression model and odds ratios (OR) were determined.

Results: In the individual studies, all cariprazine dose groups showed superiority to placebo (P<.05) on mean change from baseline to Week 6 in CGI-S scores. Least square mean differences (LSMD) ranged from -0.3 to -0.6. The pooled population comprised 161 patients (placebo, n=50; cariprazine, n=111) that were classified as severely or extremely ill and 1033 patients (placebo, n=311; cariprazine, n=722) that were at least markedly ill. A significantly greater proportion of severely ill patients at baseline improved to mildly ill or better in the cariprazine group compared with placebo (42% vs 18%; OR=3.43 [95% CI: 1.5, 7.9]; P=.004). In patients who were markedly ill or worse at baseline, 7% of cariprazine vs 3% of placebo patients improved to borderline ill/normal at Week 6 (OR=2.33 [95% CI: 1.1, 4.8]; P=.022).

Conclusions: Cariprazine treatment compared with placebo resulted in a significantly greater proportion of patients achieving clinically relevant improvements in global disease severity as measured by CGI-S category shifts. This study was funded by Forest Laboratories, Inc. and Gedeon Richter Plc.

**NO. 129**

**THE EFFICACY AND SAFETY OF ARIPIPRAZOLE ONCE-MONTHLY IN OBESE AND NON-OBESE PATIENTS WITH SCHIZOPHRENIA; A POST-HOC ANALYSIS**

*Lead Author: Anna Eramo, M.D.*
*Co-Author(s): Ross A. Baker, Ph.D., M.B.A., Marc De Hert, M.D., Dusan Kostic, Ph.D., Wally Landsberg, M.D., Lan-Feng Tsai, M.S.*

**SUMMARY:**

Objective:

To evaluate efficacy and safety of aripiprazole once-monthly 400 mg, an extended release injectable suspension of aripiprazole, in obese (BMI ≥30 kg/m2) and non-obese (BMI <30 kg/m2) patients with schizophrenia.

Methods:

Data from a 38-week, double-blind, active-controlled, non-inferiority study (NCT00706654); randomisation (2:2:1) to aripiprazole once-monthly 400 mg, oral aripiprazole (10–30 mg/day), or aripiprazole once-monthly 50 mg assessing the efficacy and safety of aripiprazole once-monthly in patients requiring chronic antipsychotic treatment were used for this post-hoc analysis. We report the overall relapse rates in the 38-week randomized phase. Comparisons of overall relapse rates were analyzed using the Chi-squared test.

Results:

A total of 662 patients were randomized to: aripiprazole once-monthly 400 mg (n=265); oral aripiprazole (n=266); or aripiprazole once-monthly 50 mg (n=131). Of these, the following were obese: aripiprazole once-monthly 400 mg: n=95 (36%); oral aripiprazole: n=95 (36%); aripiprazole once-monthly 50 mg: n=43 (33%). In the obese patients, the overall relapse rate was significantly (p=0.0012) lower with aripiprazole once-monthly 400 mg (7.4%) than with aripiprazole once-monthly 50 mg (27.9%). The difference between aripiprazole once-monthly 400 mg and oral aripiprazole (8.4%) was not significantly different. In the non-obese patients, the overall relapse rate was significantly (p=0.0153) lower with aripiprazole once-monthly 400 mg (8.8%) than with aripiprazole once-monthly 50 mg (19.3%). The difference between aripiprazole once-monthly 400 mg and oral aripiprazole (7.6%) was not significantly different. For patients treated with aripiprazole once-monthly 400 mg, the most common treatment emergent adverse events (≥10% in any group) were insomnia (obese: 12.6%, non-obese 11.2%), headache (obese: 12.6%, non-obese 8.2%), injection site pain (obese: 11.6%, non-obese 5.3%), akathesia (obese: 10.5%, non-obese 10.6%), upper respiratory tract infection (obese: 10.5%, non-obese <5%). Increased weight was reported as an adverse event in 10.5% of the obese patients and 8.2% in the non-obese patients. In the aripiprazole once-monthly 400 mg treated patients, the incidence of shifts from non-obese at baseline to obese during the randomized phase was 7.6% (13/170) and from obese to non-obese was 17.9% (17/95).

Conclusions:

The efficacy and tolerability of aripiprazole once-monthly 400 mg were similar in both the obese and non-obese subgroups.

Disclosure: Supported by Otsuka Pharmaceutical Development

& Commercialization, Inc., and H. Lundbeck A/S

**NO. 130**

**A COMPARISON OF 2 FIXED DOSES OF ASENAPINE WITH PLACEBO IN ADOLESCENTS DIAGNOSED WITH SCHIZOPHRENIA: RESULTS FROM A DOUBLE-BLIND, RANDOMIZED TRIAL**

*Lead Author: Robert Findling, M.D.*
*Co-Author(s): Sabine Braat, M.S., Ronald P. Landbloom, M.D., Mary Mackle Ph.D., Wendi Pallozzi, M.S., Armin Szegedi M.D., Ph.D.*

**SUMMARY:**
BACKGROUND: Asenapine is an oral second-generation antipsychotic, which is indicated for the acute treatment of schizophrenia in adults.
AIM: To test the superiority of ≥1 asenapine dose compared to placebo (PBO), measured by change from baseline in the Positive and Negative Syndrome Scale (PANSS) total score in adolescents (12–17 years) diagnosed with schizophrenia.
METHODS: Subjects were diagnosed based on DSM-IV-TR™ criteria and randomized into a 1:1:1 distribution into PBO and the following asenapine groups: 2.5 mg twice daily (bid) and 5 mg bid. Asenapine was administered as a fast-dissolving sucralose flavored sublingual tablet. The primary efficacy end point was the change from baseline on day 56 in the PANSS total score. The key secondary end point was the change from baseline on day 56 in the Clinical Global Impression-Severity (CGI-S) score. Efficacy for the Full Analysis Set (n=300) was analyzed with a Mixed Model for Repeated Measures (MMRM) using Hochberg's procedure to correct for multiplicity of the 2 asenapine to PBO comparisons for the primary efficacy end point, and the safety data were analyzed using the All-Subjects-as-Treated (n=306) population.
RESULTS: Across the groups a similar percentage of subjects completed treatment day 56 (2.5 mg bid: 82.7%; 5 mg bid: 78.3%; PBO: 79.4%). Subjects in the asenapine groups were more likely to discontinue due to adverse events (AE) (2.5 mg bid: 6.1%; 5 mg bid: 7.5%) whereas treatment failure was the more common reason for discontinuing in the PBO group (6.9%). The MMRM analysis did not show statistically significant differences for the asenapine vs PBO comparisons on day 56 (least squares [LS] mean [95% CI]: 2.5-mg bid: –4.8 [(–9.9, 0.4); P=0.070]; 5-mg bid: –5.6 [(–10.7, –0.5); P=0.064]). As the primary efficacy end point was not significant, no confirmative testing of the secondary outcome could be done. However, a significant improvement in the CGI-S score was observed in the 5-mg bid group when compared to PBO on day 56 (LS mean [95% CI] –0.3 [(–0.6, -0.0); P=0.024]). Serious AEs were similar across the groups: 2.5 mg bid: 3.1%, 5 mg bid: 2.8%, PBO: 2.9% and no deaths occurred. The safety events of somnolence, sedation, and hypersomnia were more frequent in both asenapine groups vs PBO, whereas dizziness was more frequent in the 2.5-mg bid group vs PBO. Akathisia, fasting glucose elevation, and Extrapyramidal Syndrome (EPS) occurred more frequently in the 5-mg bid group vs PBO. Weight gain ≥7% from baseline to end point was more frequent in the 2.5 mg and 5 mg bid groups vs PBO.
CONCLUSIONS: In adolescents (12–17 years), compared to PBO, neither asenapine dose tested improved the PANSS total score at day 56 greater than PBO; however, the data suggest 5 mg bid improved the CGI-S score at day 56. The safety and tolerability profiles of the 2 doses were similar, although weight gain, EPS, and fasting glucose elevation were more frequent in the 5-mg bid group.
Supported by Merck, NJ

**NO. 131**

**EFFECTS OF SMOKING IN THE METABOLISM OF ANTIPSYCHOTICS LEADING TO WORSENING PSYCHOSIS**

*Lead Author: Suhey G. Franco Cadet, M.D.*
*Co-Author(s): Rumana Rahmani, M.D., Jasmine Kearse, M.D., Michael Olla, M.D.*

**SUMMARY:**
61 year old Albanian female with a history of schizoaffective disorder undifferentiated type for unspecified number of years. Patient has a history of at least 3 prior inpatient hospitalizations, last discharge from BRMC on 8/7/2012. Patient currently follows up with a psychiatrist in Hackensack for the past several years.
Reportedly, as per collateral, patient was on her usual state of mind taking care of her ADLs with no reported mood symptoms and minimal psychotic symptoms (paranoia) for at least 2 years. Reportedly patient was compliant with her psychiatric medications. Approximately one month ago patient decided to start smoking again after almost one year of quitting smoking. Patient started to smoke 1-2 cigarettes a day and one week later increased the amount abruptly to 1-2 packs a day; she started decompensating exhibiting aggressive and agitated behavior with increase craving for cigarettes. During the second week patient started to exhibit worsening paranoid ideations that people were after her, was also responding to internal stimuli and stated that people were inside the walls. As per daughter, patient was increasingly agitated and aggressive, punching walls, yelling and swatting at the air responding to what appeared to be visual hallucinations. Patient was also been exhibiting persecutory delusions that somebody is after her trying to hurt her and paranoid delusions about going to the bathroom. Patient started defecating in the closet and on the floor, urinating on herself, and not taking care of ADLs and stopped taking psychiatric medications due to worsening psychosis. Also patient was talking to self unintelligibly and pacing around the home. As per collateral, patient had decrease sleep (not being able to sleep for the past week) and appetite; no other depressive symptoms reported. Anxious mood and restlessness reported; no other anxiety symptoms reported, no obsessions/compulsions/flashbacks or nightmares reported. No history of elevated mood or manic symptoms reported, no other substance use reported.

**NO. 132**

**PALIPERIDONE PALMITATE DELAYS RELAPSE IN PATIENTS WITH SCHIZOAFFECTIVE DISORDER**

Lead Author: Dong-Jing Fu, M.D., Ph.D.
Co-Author(s): L. Alphs, M.D., Ph.D., J.-P. Lindenmayer, M.D., N. Schooler, Ph.D., R.B. Simonson, B.S., I. Turkoz, Ph.D., D. Walling, Ph.D.

SUMMARY:
Introduction: Symptoms of schizoaffective disorder (SCA) are complex and disabling, with higher risks of hospitalization, suicidality, and substance abuse than in schizophrenia. Optimal

treatment for SCA is not yet well established. To manage both psychotic and mood symptoms, clinicians often utilize complex polypharmacy, the benefit of which is not fully established. Although efficacy of antipsychotics in SCA has been reported, few large controlled studies have systematically studied SCA clinical characteristics and disease course. Results of the first controlled maintenance study of the long-acting injectable antipsychotic, paliperidone palmitate (PP), in SCA are presented.
Method: This randomized, double-blind, placebo (PBO)-controlled, international study (NCT01193153) included subjects who met SCID-confirmed DSM-IV diagnosis of SCA experiencing an acute exacerbation of psychotic symptoms with prominent mood symptoms ≥16 on YMRS and/or HAM-D-21. Subjects could continue adjunctive stable doses of antidepressants (AD) or mood stabilizers (MS). After stabilization with PP (78–234 mg [50–150 mg equivalents of paliperidone]) during a 13-week, open-label (OL), flexible-dose, lead-in period, subjects continued into the 12-week OL fixed-dose stabilization period. Stable subjects (PANSS total score ≤70, YMRS ≤12, and HAM-D-21 ≤12) were randomized (1:1) to continued PP or PBO in the 15-month, double-blind, relapse prevention period (RPP). Time to relapse was summarized using Kaplan–Meier estimates. A between-group comparison was performed using a log-rank test controlling for concomitant medication strata. A Cox proportional hazards model was carried out to examine treatment differences. Adverse events (AEs) were summarized using descriptive statistics.
Results: 667 subjects enrolled; 334 subjects stabilized and randomized (164 to PP and 170 to PBO) in the RPP. Mean (SD) age: 39.5 (10.7) years; 54% male; 45% on PP monotherapy; 55% on adjunctive AD or MS. During the double-blind period, PP significantly delayed time to relapse (P<0.001). 25 (15%) patients relapsed in the PP arm and 57 (34%) in the placebo arm. Risk of relapse was 2.49-fold higher for the placebo group (HR 2.49; 95% CI 1.55-3.99; P<0.001). In subgroup analysis, the risk of relapse was 3.38 or 2.03 times higher for the placebo group in monotherapy or in adjunctive AD/MS treatment, respectively (HR 3.38; 95% CI 1.57-7.28; P=0.002 and HR 2.03; 95% CI 1.11-3.68; P=0.021). AEs occurring in >5% of patients in any group included weight increased (PP 8.5%, PBO 4.7%), insomnia (4.9%, 7.1%), SCA (3.0%, 5.9%), headache (5.5%, 3.5%), and nasopharyngitis (5.5%, 3.5%).
Conclusion: PP as monotherapy or adjunctive to AD/MS significantly delayed relapse in patients with SCA. When stable subjects stopped treatment (PBO arm), they had a 2.49 times higher risk of relapse than those who continued PP treatment during the 15-month double-blind period.
Funded by Janssen Scientific Affairs, LLC

**NO. 133**

**IS QUALITY OF LIFE RELATED TO COGNITION OR NEGATIVE SYMPTOMS IN SCHIZOPHRENIA? A DOUBLE-BLIND, ACTIVE-CONTROLLED LURASIDONE EXTENSION STUDY**

*Lead Author: Philip Harvey, Ph.D.*
*Co-Author(s): A. Loebel, MD, J. Cucchiaro ,PhD, D. Philips, MD, C. Siu, PhD*

**SUMMARY:**

Objectives
Everyday functioning and quality of life are markedly impaired in schizophrenia. These impairments are related to both negative symptoms and cognitive deficits. Treatment of these symptoms would seem to have the potential to improve these critical real-world outcomes. The objective of this post-hoc analysis was to examine the longitudinal relationships between quality of life and both negative symptoms and cognitive performance in patients with schizophrenia treated with lurasidone or quetiapine XR over a 6-month assessment period.
Methods
This double-blind, extension study included subjects with schizophrenia who had completed an initial randomized, double-blind, placebo-controlled, 6-week treatment trial. Subjects received continued treatment with flexible once-daily doses of lurasidone (40-160 mg; n=151, LUR-LUR) or quetiapine XR (200-800 mg; n=85, QXR-QXR) over a 12-month treatment period; results through the 6-month cognitive assessment period are presented here. Subjects initially treated with PBO were started on flexible once daily doses of lurasidone (40-160 mg; N=56) (PBO-LUR). Negative symptoms were assessed with the PANSS negative subscale. Cognitive performance and functional capacity were assessed by the CogState computerized cognitive. Quality of life was measured using the Quality of Well-Being (QWB-SA) scale.
Results
At the core phase baseline, the QWB-SA total score was similar for the LUR-LUR (0.57, SE 0.02) and QXR-QXR (0.57, SE 0.02) groups. Significant improvement in QWB-SA total score from core baseline at months 3 and 6 [0.20 (SE 0.01) and 0.22 (SE 0.01)], respectively, were found in the LUR-LUR group and the QXR-QXR group (0.20, SE 0.02 for both Months 3 and 6) (p>0.05, LUR-LUR vs. QXR-QXR).
Improvement of the PANSS negative symptom subscale from baseline was significantly greater at the 6-month extension endpoint for LUR-LUR (-7.2, SE 0.31) vs. QXR-QXR (-5.97, SE 0.43) (p=0.026). Improvement in cognitive performance was also significantly better for LUR-LUR compared to QXR-QXR at both Months 3 (d=0.32, p<0.05) and 6 (d=0.49, p<0.01). Improved QWB-SA score was longitudinally associated with reductions in negative symptoms (p<0.01, in both the core and extension phases) and improvement in cognitive performance (p<0.05, in the extension phase only). Early reduction of negative symptoms and improvement of cognitive performance at Week 6 were significant predictors of quality of life outcome at Month-6 in the continuation study.
Conclusions
In this active-controlled, double-blind extension study in patients with schizophrenia, improvement in quality of life was detected in a long term antipsychotic treatment, with improvements in cognition, and negative symptoms, being the significant predictors of improvement. These findings underscore the importance of improving cognitive impairments and negative symptoms in patients with schizophrenia.

**NO. 134**

**HEALTH-RELATED QUALITY OF LIFE AMONG PATIENTS SWITCHED TO LURASIDONE: A SIX-MONTH EXTENSION STUDY AMONG PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Mariam Hassan*
*Co-Author(s): George Awad, MD., Jay Hsu, MS., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D., Krithika Rajagopalan, Ph.D.,*

**SUMMARY:**

Background: Improvements in health-related quality of life (HRQoL) are important outcomes in treatment of patients with schizophrenia. In addition, improved HRQoL may improve adherence to medications which is associated with reduction in relapse and rehospitalization rates. It is therefore important to ensure that HRQoL is maintained over a long period of time in patients with schizophrenia. Previous research from a 6-week core study showed that stable but symptomatic outpatients with schizophrenia who were switched from their current antipsychotic to lurasidone had significantly improved HRQoL. Patients who completed this trial were eligible for enrollment in an open-label, flexible-dose, 6 month extension study. This analysis evaluated changes in HRQoL for patients enrolled in the 6-week core study and continued on long-term treatment with lurasidone in the 6 month extension trial.
Methods: Stable but symptomatic outpatients with schizophrenia or schizoaffective disorder who completed the 6-week open-label core study were initiated on the same dose (40mg to 120mg) of lurasidone in the 6 month extension study. Long-term changes in HRQoL were evaluated from baseline (BL) of the core study to study end point of the extension study(Week 30 assessment; observed cases) using the Personal Evaluation of Transitions in Treatment (PETiT) scale. The PETiT is a validated 30-item instrument that measures self-reported overall HRQoL outcomes and two domain scores, psychosocial functioning and adherence-related attitude, specifically among patients with schizophrenia. PETiT is assigned a rating of 2, 1, or 0, where 2 denotes positive change and 0 denotes negative change. Higher scores on the PETiT denote better HRQoL. Changes from baseline to study endpoint in PETiT total score (overall HRQL) and domain scores (psychosocial functioning and adherence) were compared using ANCOVA with treatment as fixed effect, and baseline score and pooled site as covariates.
Results: Of the 198 patients who completed the core study, 148 entered the extension study and received the study medication. Of these, a total of 98 patients (65.8%) who completed the extension study and had available data on the PETiT were included in the current analysis. For all patients, the mean (SD) PETiT total score was 34.9 (9.3) at BL and 39.1 (9.0) at the study endpoint, a statistically significant within-in group improvement of 5.1 (7.2) ($p < 0.001$). Mean changes (SD) from baseline to study endpoint for the PETiT domains of psychosocial functioning (3.8 [5.8]) and adherence-related attitude (1.3 [2.5]) were also statistically significant (both $p < 0.001$).
Conclusions: The post-hoc analysis indicates that switching stable but symptomatic patients with schizophrenia to lurasidone was associated with a long-term improvement in overall HRQoL, psychosocial functioning, and adherence-related attitude.
Sponsored by Sunovion Pharmaceuticals Inc

**NO. 135**

**ASYMMETRIC DIMETHYLARGININE IN SOMATICALLY HEALTHY SCHIZOPHRENIA PATIENTS TREATED WITH SECOND-GENERATION ANTIPSYCHOTICS**

*Lead Author: Anders Jorgensen, M.D., Ph.D.*
*Co-Author(s): Anders Fink-Jensen, M.D., DMSci, Martin B. Jorgensen, M.D., DMSci, Ulla Knorr, M.D., Ph.D., Jens Lykkesfeldt, DMSci, Niels V. Olsen, M.D., DMSci, Henrik E. Poulsen, M.D., DMSci, Mia G. Soendergaard, M.D., Ph.D., Jonatan M. Staalsø, M.D., Ph.D*

**SUMMARY:**
Background: Schizophrenia is associated with a severely increased somatic morbidity and mortality primarily caused by cardiovascular disorders. This may partly be caused by the side-effects of second-generation antipsychotics (SGA), which may induce weight gain and metabolic syndrome. Asymmetric dimethylarginine (ADMA) and the arginine:ADMA ratio are proposed markers of endothelial dysfunction, that has been shown to predict mortality and adverse outcome in a range of cardiovascular disorders. As an endogenous inhibitor of the nitric oxide synthase, ADMA exerts its effects through a reduction in NO levels. However, increased ADMA levels has also been suggested to lead to increased oxidative stress. Plasma ADMA was previously found to be increased in first-episode schizophrenia. We hypothesized that ADMA and the arginine:ADMA ratio are increased in somatically healthy schizophrenia patients treated with SGA, and that the ADMA and the arginine:ADMA ratio are positively correlated to measures of oxidative stress.
Methods: We included 40 healthy controls and 40 schizophrenia patients treated with SGA, but without somatic disease or drug abuse. Plasma levels of ADMA and the arginine:ADMA ratio were determined by high-performance liquid chromatography. Data were compared with markers of oxidative stress (8-oxodG/8-oxoGuo, markers of DNA/RNA oxidation, and malondialdehyde, a marker of lipid peroxidation), as well as measures of medication load, duration of disease and symptom severity (as measured by the Postitive and Negative Syndrome Scale (PANSS)).
Results: We found no difference between schizophrenia patients and controls in plasma ADMA (Schizophrenia: 0.372 (± 0.078) µM; Control: 0.367 (± 0.078) µM, independent samples test t=-0.252, dF=78, p=0.801) or the arginine:ADMA ratio (Schizophrenia: 352.7 (±104.1); Control: 353.8 (±79.1), t=-0.053 , dF=78, p=0.958). This continued to be the case when analyzing males and females separately. We found found no signifcant correlations between oxidative stress markers, medication load, duration of illness or PANSS scores.
Conclusion: Neither schizophrenia per se nor treatment with SGA are associated with increased levels of ADMA or an increased arginine:ADMA ratio. Furthermore, levels of ADMA are not associated with levels of systemic oxidative stress in vivo.

**NO. 136**

**ADHERENCE TO ORAL ANTIPSYCHOTICS ACROSS AGE CATEGORIES AMONG MEDICAID PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Ross A. Baker, M.B.A., Ph.D.*
*Co-Author(s): Christopher M. Blanchette, Ph.D., M.B.A., Sudeep Karve, Ph.D., Anna Eramo, M.D., Steve Offord, Ph.D., Ruth A. Duffy, Ph.D., Shweta Madhwani, M.S., Siddhesh A. Kamat, M.S., M.B.A.*

**SUMMARY:**
Background: Schizophrenia is associated with a substantial clinical and economic burden. Gaps in antipsychotic treatment increase the risk of relapses among patients with schizophrenia. The objective of this study was to evaluate adherence to oral antipsychotic treatments across different age categories.
Methods: Adult patients (≥18 years) with at least 1 fill for an oral antipsychotic from January 1, 2008, to October 1, 2010, were identified from the Truven Health Analytics MarketScan®

Medicaid Multi-state Database. Patients were required to have at least 1 inpatient or 2 outpatient medical claims on separate dates with a primary or secondary diagnosis of schizophrenia (ICD-9-CM: 295.0X, 295.1X, 295.2X, 295.3X, 295.5X, 295.6X, 295.8X, 295.9X) and continuous medical and pharmacy health plan enrollment for 6 months before and 18 months after (follow-up period) oral antipsychotic initiation (index event). Patients with medical claims for bipolar disorder or major depressive disorder were excluded from the analysis. Adherence to oral medications was evaluated over the entire follow-up period and also in 6-month increments to observe the change in adherence over time (compared using paired t-test and McNemar's test). Adherence was calculated using Proportion of Days Covered (PDC=sum of days' supply/days of follow-up; PDC of 1 indicates full adherence and 0 indicates poor adherence). The study cohort was divided into 4 age categories (18–30, 31–40, 41–50, and 51–60 years) to assess differences in adherence across age groups.
Results: Of 1,616 patients identified with schizophrenia and initiating treatment with oral antipsychotics, 585 (36%) were 18–30 years, 346 (21%) were 31–40 years, 350 (22%) were 41–50 years, and 335 (21%) were 51–60 years. Mean age of the study cohort was 37 years (standard deviation [SD]=12.6), and 52% of patients were male. Adherence to oral medications during the 18 months of follow-up was low across all age groups: mean PDC was 0.44 for patients 18–30 years of age, 0.45 for 31–40 years, 0.43 for 41–50 years, and 0.45 for 51–60 years. Among patients 18–30 years of age, 54% had PDC less than 0.4, and 24% had PDC between 0.40 and 0.79, indicating poor adherence to antipsychotic therapy among younger patients. Compared with the initial 1–6 month period (mean PDC=0.55) adherence to oral antipsychotics overall declined significantly during months 7–12 (mean PDC=0.41; P<0.0001) and month 13–18 (mean PDC=0.36; P<0.0001), a trend that remained consistent across all age groups.
Discussion: Adherence to oral antipsychotics was low, even among younger patients with schizophrenia, and decreased over the 18-month period examined. Since long-acting formulations provide complete drug coverage for the duration of each injection, long-acting injectables should be considered for patients with schizophrenia across all age groups.

**NO. 137**

**ALTERNATE INJECTION SITES OF CARE FOR PATIENTS WITH SCHIZOPHRENIA: ACCESS AND CONTINUED USE OF LONG-ACTING INJECTABLE ATYPICAL ANTIPSYCHOTICS**

*Lead Author: Kate L. Lapane, M.S., Ph.D.*
*Co-Author(s): Carmela Benson, M.S., John Fastenau, M.P.H*

**SUMMARY:**

Background: For individuals with schizophrenia, adherence to antipsychotic medication is sub-optimal. Non-adherence increases the risk of relapse and hospitalization. The extent to which providing alternate injection sites of care for long-acting injectable (LAI) improves use of LAI in accordance with health care professional (HCP) orders remains unknown.
Objective: To compare characteristics and patient outcomes of enrollees with schizophrenia who requested the alternate injection sites offering versus those who did not request the offering.
Methods: Using the 2-year administrative files for the Janssen® Connect® (JC) program, we identified patients whose HCP determined a Janssen LAI to be the most clinically appropriate treatment option and for whom an alternate injection site was requested. Patients were classified as adherent if their estimated proportion of days covered was ≥ 80%. Logistic regressions evaluated the associations between adherence, and patient characteristics, and request for offerings such as alternate sites of care.
Results: Among 6,589 patients with completed enrollment information receiving care from HCPs at 740 inpatient/outpatient facilities, 38.8% of the enrollment forms included an alternate injection site of care. While gender and age distributions did not vary by request for alternate injection site of care, patients for whom this offering was requested were more likely enrolled from an inpatient setting and more likely new to treatment than patients who did not request the offering. Of those for whom alternate site of care HCP-ordered injections were requested, 55.8% received ≥ one injection. In a subgroup of patients for whom alternate sites of care were requested and whose HCPs ordered paliperidone palmitate(n=1,100), 9% were in the program for ≤ 3 months and were less likely than those in the program for ≥ 4 months to achieve ≥ 80% proportion of days covered (55.0% versus 81.3%, p-value<0.0001).
Conclusions: This administrative data analysis of the JC program support suggests that alternate injection sites of care may help patient's follow their HCP's orders, but additional assistance may be needed for those transitioning from inpatient settings and those at high risk for non-adherence. A summative evaluation of this program support is on-going.

**NO. 138**

**THE RELATIONSHIP BETWEEN MAJOR MOOD AND PSYCHOTIC DISORDERS AND SEXUAL FANTASIES IN PSYCHIATRIC INPATIENTS**

*Lead Author: Yana Lopatyuk*
*Co-Author(s): Lisa J. Cohen, Ph.D., Igor Galynker, MD, PhD., Azra Qizilbash, MA., Thachell Tanis, BA.*

**SUMMARY:**

OBJECTIVE: Clinicians have often considered normative sexual functioning as an indicator of mental health (Ace, Widener, Chester, 2007). However, there is little data which evaluates the relationship between sexual fantasies and major mood and psychotic disorders. The current study aims to explore the relationship between these disorders and sexual fantasies in psychiatric inpatients.
METHODS: One hundred and nineteen (119) English-speaking inpatients between the ages of 18 and 65 were recruited from an urban hospital. Four major mood and psychotic disorders were evaluated: schizophrenia, bipolar, schizoaffective, and major depressive disorder (MDD). To determine psychotic diagnosis, subjects were administered the Structural Clinical Interview for DSM-IV Axis I (SCID-I). Sexual fantasies were assessed by the Wilson Sexual Fantasies Questionnaire (WSQ). The WSQ is a forty item self-report questionnaire, which measures 4 types of sexual fantasies: exploratory, intimate, impersonal, and sadomasochistic.
RESULTS: Sexual fantasies were compared across the 4 diagnostic groups using ANOVA. Each group was compared to the rest of the sample in 4 separate analyses. Bipolar patients reported significantly higher intimate sexual fantasies than the rest of

the sample (F= 8.06, p <.01). Schizophrenic and schizoaffective sexual fantasy scores were non-significantly lower on exploratory, impersonal, and intimate sexual fantasies in comparison to the rest of the sample. MDD patients' scores did not significantly differ from the rest of the sample.
CONCLUSIONS: Our results are consistent with the symptomatology of bipolar, schizophrenia, and schizoaffective disorders. Patients with bipolar disorder demonstrated higher intimacy scores in comparison to the rest of the sample. These results are consistent with hypersexual tendencies that are characteristic of mania. Schizophrenic and schizoaffective patients showed trends for lower exploratory, impersonal, and intimate scores when compared to the rest of the sample. These findings are consistent with negative symptoms characteristic of schizophrenic and schizoaffective patients.
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**NO. 139**

**AN OPEN-LABEL EXTENSION STUDY OF LURASIDONE SAFETY AND EFFICACY IN PATIENTS WITH SCHIZOPHRENIA PREVIOUSLY RANDOMIZED TO LURASIDONE OR RISPERIDONE**

*Lead Author: Gregory W. Mattingly, M.D.*
*Co-Author(s): Michael Tocco, Ph.D., Debra Phillips, A.S., Jane Xu, Ph.D., Andrei Pikalov, M.D., Ph.D., Antony Loebel, M.D.*

**SUMMARY:**
Objective: To evaluate the safety and efficacy of lurasidone in patients with chronic schizophrenia who continued on lurasidone (LUR-LUR) or switched from risperidone (RIS-LUR) after 12 months of double-blind treatment.
Methods: Patients completing a 12-month, randomized, double-blind study evaluating treatment with flexibly dosed lurasidone (40-120 mg/d) versus risperidone (2-6 mg/d) entered a 6-month, open-label extension (OLE) study with flexibly dosed lurasidone (40-120 mg/d). Descriptive statistics evaluated safety and efficacy using a last observation carried forward (LOCF) or observed case (OC) approach.
Results: A total of 223 patients (136 LUR-LUR, 87 RIS-LUR) continued into the OLE study. Mean (SD) lurasidone dose during the OLE was 81.1 mg/d (13.8 mg/d). The overall discontinuation rate of patients from the OLE was 19.9% for LUR-LUR and 25.3% for RIS-LUR. Mean (SD) change in weight from OLE baseline to endpoint (OC) was -0.6 kg (3.3 kg) for LUR-LUR and -2.9 kg (5.4 kg) for RIS-LUR patients. For LUR-LUR patients, median changes in metabolic parameters from OLE baseline to endpoint (OC) were -4.0 mg/dL for total cholesterol, -4.5 mg/dL for triglycerides, and 0.0 mg/dL for glucose. For RIS-LUR patients, median changes in metabolic parameters from OLE baseline to endpoint (OC) were 4.5 mg/dL for total cholesterol, -5.5 mg/dL for triglycerides, and -3.0 mg/dL for glucose. Prolactin levels showed little change during the OLE in LUR-LUR patients (median change from OLE baseline to endpoint [OC]: men, 0.2 ng/mL; women, 1.3 ng/mL) and decreased in RIS-LUR patients (men, -11.2 ng/mL; women, -30.8 ng/mL). The most common treatment-emergent adverse events (TEAEs) in LUR-LUR patients during the OLE were headache (5.1%), psychotic disorder (4.4%), upper respiratory tract infection (4.4%), and influenza (4.4%); in RIS-LUR patients, the most common TEAEs were headache (8.0%), psychotic disorder (6.9%), and anxiety (6.9%). Extrapyramidal symptom-related TEAEs were noted in 8.1% of LUR-LUR and 6.9% of RIS-LUR patients during the OLE. Akathisia and somnolence each occurred in 3.7% of LUR-LUR patients and 2.3% of RIS-LUR patients during the OLE. Discontinuation from the OLE due to a TEAE occurred in 5.1% of LUR-LUR and 6.9% of RIS-LUR patients. Mean (SD) Positive and Negative Syndrome Scale total score at OLE baseline was 55.5 (12.7); mean change from OLE baseline (LOCF) was 1.0 in both the LUR-LUR and RIS-LUR groups. Mean (SD) Clinical Global Impression–Severity Scale total score at OLE baseline was 2.9 (0.8), with no mean change from OLE baseline to endpoint in either subgroup.
Conclusion: Switching to lurasidone after 12 months of treatment with risperidone was generally safe and well tolerated, with improvement in weight and prolactin levels, in this 6-month OLE study. Patients who transitioned from risperidone to lurasidone maintained clinical stability.
This study was sponsored by Sunovion Pharmaceuticals Inc.
ClinicalTrials.gov: NCT00641745

**NO. 140**

**EXPLORING BARRIERS TO TREATMENT IN PATIENTS WITH PSYCHOTIC DISORDERS: INSIGHTS FROM THE STAR INTENSIVE OUTPATIENT PROGRAM**

*Lead Author: Nidal Moukaddam, M.D., Ph.D.*
*Co-Author(s): Beatrice Rabkin, Phuong Nguyen, PhD*

**SUMMARY:**
Background: Treatment of chronic psychotic disorders in outpatient settings is fraught with challenges; these include non-compliance with treatment , comorbid substance use, ambivalence (and frequently lack of insight) about diagnosis and need for treatment. The Stabilization, Treatment, And Rehabilitation (STAR) program, an intensive twice-weekly multidisciplinary treatment endeavor, was started to serve this very challenging population. Many obstacles to treatment were noted.
Objective: to summarize the data and experience of the STAR program's first cohort of patients
Results: The majority of patients were male, with an average age of 34. Predominant diagnosis was schizophrenia. Referral rates from inpatient and outpatient units were satisfactory, but show rate for the initial assessment intake were less than 40% despite phone reminders. The patient population displayed moderate to severe symptoms as indicated by the initial scores on the Positive and Negative Syndrome Scale (PANSS). (average positive score= 21.1, average negative scale score= 23.9 and average general psychopathology score= 48). Other factors noted to influence compliance were: family support transportation and copay amounts.
Conclusions: Results from our intensive outpatient treatment program for chronic psychotic disorders suggest the target population suffers from significant symptoms that cause functional impairment in multiple areas. Compliance cannot be ensured without family or community support. Meaningful improve-

ments were noted in patients who stayed in treatment .

**NO. 141**

**SAFETY AND TOLERABILITY OF CARIPRAZINE IN LONG-TERM TREATMENT OF SCHIZOPHRENIA: INTEGRATED SUMMARY OF SAFETY DATA**

*Lead Author: Henry A. Nasrallah, M.D.*
*Co-Author(s): Andrew J. Cutler, M.D., Suresh Durgam, M.D., István Laszlovszky, Pharm.D., Ph.D., Kaifeng Lu, Ph.D., Krisztián Nagy, M.D., Yao Wang, M.D.*

**SUMMARY:**
Introduction: Cariprazine, a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors, is in late-stage clinical development for treatment of schizophrenia and bipolar mania. Pooled data from 2 open-label studies evaluated the long-term safety and tolerability of cariprazine in patients with schizophrenia.
Methods: This is an integrated summary of safety and tolerability data from two 48-week studies of open-label, flexible-dose cariprazine in adult patients with schizophrenia. In the first study (NCT01104792), new patients and patients who completed double-blind treatment in 1 of 2 lead-in studies (NCT01104766 or NCT01104779) received cariprazine 3-9 mg/day. In the second study (NCT00839852), patients who had completed a separate double-blind lead-in trial (NCT00694707) received cariprazine 1.5-4.5 mg/day. In both studies, a 1-week no-drug screening period was followed by 48 weeks of open-label treatment and a 4-week safety follow-up. Safety evaluations included adverse events (AEs), vital signs, laboratory measures, ECG, ophthalmologic examinations, and assessments on the Barnes Akathisia Rating Scale (BARS) and the Simpson-Angus (SAS).
Results: A total of 679 patients were enrolled and received at least 1 dose of open-label treatment with cariprazine; 40.1% completed 48 weeks of open-label treatment with cariprazine. The mean duration of treatment with cariprazine (days ± SD) was 188.4 ± 136.8; 211 patients (31.1%) were exposed to cariprazine for at least 1 year. In patients entering the extension study, PANSS and CGI-S scores further decreased over the course of the study. Serious AEs (SAEs) were reported in 79 patients (11.6%) including 1 death (suicide) during the open-label treatment period. The most common SAEs were worsening of schizophrenia (4.4%) and psychotic disorder (2.1%). Treatment-emergent AEs (TEAEs) were reported in 553 patients (81.4%). TEAEs reported in at least 10% of patients were akathisia (15.5%), insomnia (13.1%), headache (12.7%), and weight increase (10.5%). Mean change in body weight was small (+2.46 kg). Mean changes in metabolic parameters and other clinical laboratory values, blood pressure, and ECG parameters were generally small from baseline to the end of study. No patients met Hy's law. Mean prolactin levels decreased from baseline to the end of study. The incidence of treatment-emergent parkinsonism (SAS >3) was 10.7% and the incidence of treatment-emergent akathisia (BARS >2) was 17.8%. Ophthalmologic testing revealed no significant changes.
Conclusion: Cariprazine administered for up to 48 weeks in adults with schizophrenia was generally safe and well tolerated, with relatively few new AEs compared with acute treatment.
This study was funded by Forest Laboratories, Inc. and Gedeon Richter Plc.

**NO. 142**

**EFFECT OF LONG-TERM TREATMENT WITH LURASIDONE OR RISPERIDONE ON METABOLIC SYNDROME STATUS IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: John W. Newcomer, M.D.*
*Co-Author(s): Josephine Cucchiaro, PhD, Antony Loebel, MD, Andrei Pikalov, MD, PhD, Krithika Rajagopalan, PhD, Kei Watabe, MS*

**SUMMARY:**
Objective: To evaluate the effect of long-term treatment with lurasidone or risperidone on metabolic syndrome status.
Methods: Outpatients with clinically stable schizophrenia were randomized 2:1 to flexibly dosed, once-daily lurasidone (40–120 mg/d) or risperidone (2–6 mg/d) in a 12-month, multiregional, double-blind study that was followed by an open-label extension, during which all patients received flexibly dosed lurasidone (40–120 mg/d) for up to 6 months. NCEP/ATP-III criteria were used to evaluate metabolic syndrome, defined as ≥3 of the following: waist circumference >102 cm in men or >88 cm in women, triglycerides ≥150 mg/dL, HDL cholesterol <40 mg/dL in men or <50 mg/dL in women, blood pressure ≥130/85 mmHg (or antihypertensive medication use), or glucose ≥110 mg/dL (or antihyperglycemic medication use). Lurasidone and risperidone treatment groups were compared using a chi-square test. Double-blind and open-label data were analyzed using observed cases (OC) and study completers.
Results: The prevalence of metabolic syndrome at baseline of the double-blind phase was similar for the lurasidone (22.8%; 95/416) and risperidone (23.4%; 47/201) groups. After 12 months of treatment, the prevalence of metabolic syndrome (OC) was 20.8% (31/149) and 32.6% (30/92) in the lurasidone and risperidone treatment groups, respectively ($p<0.05$). Among patients without metabolic syndrome at baseline, 14.0% (16/114) of lurasidone-treated patients met criteria for metabolic syndrome after 12 months, compared with 21.4% (15/70) of risperidone-treated patients (OC, p=NS). Of the patients with metabolic syndrome at baseline, 55.9% (19/34) in the lurasidone group no longer met criteria for metabolic syndrome after 12 months, compared with 28.6% (6/21) in the risperidone group (OC, $p<0.05$). For patients taking lurasidone in the double-blind phase who continued on lurasidone in the open-label phase (n=109), the prevalence of metabolic syndrome was 20.4% at double-blind baseline and 20.2% after 18 months of treatment. In a similar analysis of patients switched to open-label lurasidone after 12 months of double-blind risperidone treatment (n=65), the prevalence of metabolic syndrome was 26.6% at double-blind baseline, 33.8% at open-label baseline (after 12 months of risperidone) and 29.2% after 6 months of open-label lurasidone.
Conclusion: In this long-term, randomized, double-blind study with open-label extension, lurasidone treatment was associated with a lower risk of metabolic syndrome compared with risperidone treatment. The prevalence of metabolic syndrome remained stable over 18 months of continuous treatment with lurasidone, in contrast to increases in the prevalence of metabolic syndrome over 12 months of treatment with risperidone. The prevalence of metabolic syndrome decreased in risperidone-treated patients who were switched to lurasidone for 6 months.

This study was sponsored by Sunovion Pharmaceuticals Inc.
ClinicalTrials.gov: NCT00641745

**NO. 143**

**LORCASERIN, A 5HT2C AGONIST, IN THE MANAGEMENT OF OLANZAPINE-INDUCED WEIGHT GAIN: CASE SERIES**

*Lead Author: Charles T. Nguyen, M.D.*
*Co-Author(s): Stephanie R. Alley, MA*

**SUMMARY:**

Introduction

Antipsychotic medications, both typical and atypical, share the potential side effect of weight gain with atypical agents carrying a greater risk. Atypical antipsychotics, such as clozapine and olanzapine, which antagonize the 5-HT (serotonin) subtype 5-HT2c receptor, have been associated with a higher likelihood to induce weight gain.

By contrast, agonism of the 5-HT2C receptor –such as fenfluramine and M-chlorophenylpiperazine- may lead to appetite suppression. Tecott and colleagues developed a strain of mice whose genes for the 5-HT2C receptor was removed. Those mice missing the 5-HT2C receptor had a propensity for seizures and increased obesity.

The FDA approved lorcaserin, a selective 5-HT2C receptor agonist, in 2012 as an adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in adults. It is hypothesized that lorcaserin may counter the 5-HT2C receptor antagonism of olanzapine, leading to weight loss.

Case Reports

We present two case reports of obese patients diagnosed with schizophrenia who had significant weight gain with olanzapine. Lorcaserin was initiated along with lifestyle modification counseling for the management of obesity.

Case 1: A 29 year-old Asian male with schizophrenia remained psychotic on risperidone long-acting injectable 50mg every 2 weeks and divalproex 1500mg at bedtime. Olanzapine 10mg at bedtime was added to control the psychosis. After 6 months, the patient gained 62 pounds, with a weight of 272 pounds (BMI=41.4). Lorcaserin 10mg twice a day was added and the patient was educated to follow a low-carb diet. Three months later, the patient

weighed 245.8 pounds (BMI=37.5), representing 9.6% weight loss (26.2 pounds). The patient's food cravings as measured by the Food Cravings Inventory (FCI) decreased by 50.5% from baseline.

Case 2: A 35 year-old Hispanic male with schizophrenia remained psychotic on risperidone 4mg at bedtime. Olanzapine 10mg at bedtime was added to help control the psychosis. After 4 months, he gained 26 pounds, going from 195 pounds to 221 pounds (BMI=31.7). The patient was started on lorcaserin 10mg twice a day and placed on a low-carb diet. He lost 5 pounds within the first week and reported a 21% craving reduction on the FCI. However, he was unable to follow the low-carb diet. The patient gained 2.1% (225.6 pounds after 3 months of starting lorcaserin so it was discontinued in accordance with the prescribing guideline. Six weeks after stopping the lorcaserin, the patient reported an increase in food cravings by 28%, resulting in a 4% weight gain (234.6 pounds).

Discussion

Lorcaserin's selective agonism of 5-HT2C receptor may have countered the 5-HT2C receptor antagonism of olanzapine to mitigate the weight gain in one patient and help the first patient to have significant weight loss.

These two case reports demonstrate the potential use of lorcaserin in the management of olanzapine-induced weight gain.

**NO. 144**

**ARIPIPRAZOLE ONCE-MONTHLY FOR LONG-TERM MAINTENANCE TREATMENT OF SCHIZOPHRENIA: A 52-WEEK OPEN-LABEL STUDY**

*Lead Author: Timothy S. Peters-Strickland, M.D.*
*Co-Author(s): Ross A. Baker, Ph.D., M.B.A., Anna Duca, R.N., B.S.N., Anna Eramo, M.D., Na Jin, M.S., Brian Johnson, M.S., Robert McQuade, Ph.D., Pamela Perry, M.S., Raymond Sanchez, M.D.*

**SUMMARY:**

Objective:

The primary objective of this 52-week, open-label, extension study was to evaluate the safety and tolerability of aripiprazole once-monthly in the long-term maintenance treatment of subjects suffering from schizophrenia. The secondary objective was to evaluate the maintenance of the therapeutic effect of aripiprazole once-monthly.

Methods:

This study (NCT00731549) enrolled new subjects or subjects who participated in one of the lead-in studies (246 [NCT00705783] or 247 [NCT00706654]), randomized, double-blind, placebo- or active-controlled studies assessing the efficacy and safety of 400 mg aripiprazole once-monthly (Kane et al. 2012; Fleischhacker et al. 2012).

The study comprised a screening phase (if applicable), a conversion phase to oral aripiprazole (Phase 1, if applicable), an oral stabilization phase (Phase 2), and an aripiprazole once-monthly maintenance phase (Phase 3). New subjects who did not participate in the lead-in studies entered this study at screening, and then proceeded to Phase 1 or Phase 2, depending on their current antipsychotic treatment. Subjects who completed one of the lead-in studies, bypassed screening and Phase 1, but were re-stabilized on oral aripiprazole in Phase 2. Only subjects meeting stability criteria entered Phase 3, in which they received open-label aripiprazole once-monthly administered every 4 weeks for a maximum of 52 weeks. Study visits were scheduled weekly in Phase 1 and every second week in Phase 2. In Phase 3, visits were scheduled weekly for the first 4 weeks, every second week for 8 weeks, and then every 4 weeks through Week 52.

Results:

A total of 1,081 subjects entered Phase 3 [464 from study 246 (Kane et al. 2012), 474 from study 247 (Fleischhacker et al 2012) and 143 new subjects]. Of these, 79.4% (858/1081) completed 52 weeks of treatment. The most frequent primary reasons for discontinuation were withdrawal of consent (8.2%), impending relapse (4%) [3.4% with adverse events plus 0.6% without adverse events], and adverse events (2.9%). Adverse events reported by ≥5% of patients in the extension study were headache (7.6%) nasopharyngitis (7%), anxiety (6.8%), and insomnia (6.6%). The proportion of subjects in Phase 3 meeting impending relapse criteria (as previously defined [Kane et al. 2012, Fleischhacker et al. 2012]) was 8.25% (89/1079).

Conclusions:

Over a 52-week period, subjects participating in an open-label trial of aripiprazole once-monthly had a high completion rate and a low rate of discontinuation due to impending relapse. The safety and tolerability profile was similar to that observed in the lead-in studies, with no new safety signals arising during long-term treatment. The results suggest that aripiprazole once-monthly maintains effectiveness throughout long-term treatment.

References:
(1) Kane et al. J Clin Psychiatry 2012;73:617
(2) Fleischhacker et al. Neuropsychopharmacology (2012) 38, S339 (Poster presented at ACNP 2012)

**NO. 145**

**SWITCHING TO LURASIDONE IN PATIENTS WITH SCHIZOAFFECTIVE DISORDER: SAFETY, TOLERABILITY AND EFFECTIVENESS**

*Lead Author: Andrei Pikalov, M.D., Ph.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Jay Hsu, Ph.D., Antony Loebel, M.D.*

**SUMMARY:**

Introduction: Switching between antipsychotic medications commonly occurs in the treatment of psychotic illnesses such as schizoaffective disorder. Switching antipsychotic medication is a difficult benefit-risk decision which may not provide an improved outcome, even when the decision is made for specific reasons of safety, tolerability, and/or efficacy (1,2). The aim of this secondary analysis was to evaluate the tolerability and effectiveness of switching stable but symptomatic patients with schizoaffective disorder to lurasidone utilizing three different switch strategies.

Methods: Non-acute patients with schizophrenia or schizoaffective disorder who were candidates for therapeutic switching from their current antipsychotic were randomized to three 6-week, open-label lurasidone switch strategies: a 40/40 group (N=74) started on 40 mg/d for 14 days; a 40/80 group (N=88) started on 40 mg/d for 7 days, then increased to 80 mg/d for 7 days; and an 80/80 group (N=82) with 80 mg/d for 14 days. All patients were then treated for 4 weeks with flexible doses of lurasidone (40-120 mg/d). Time to treatment failure was evaluated as the primary outcome based on the following criteria: any occurrence of insufficient clinical response, exacerbation of underlying disease or discontinuation due to an adverse event (AE), as determined by investigator judgment.

Results: Ninety-one patients (37% of the total patient population) met DSM-IV-TR criteria for schizoaffective disorder. For the 3 switch strategies combined, 17.6% discontinued prematurely, including 6.7% due to adverse events. There were no clinically meaningful differences in treatment failure rates among the 3 switch strategies; (40/40 group=7.7%), (40/80 group=6.1%), (80/80 group=6.7%). For the combined lurasidone switch groups, the following median changes were observed at LOCF-endpoint: weight (-0.3 kg), cholesterol (+1.5 mg/dL), triglycerides (-19.0 mg/dL), glucose (-1.0 mg/dL). The five most commonly reported adverse events in patients with schizoaffective disorder were nausea (22.5%), insomnia (14.6%), akathisia (12.4%), vomiting (10.1%), and headache (9.0%). The mean PANSS total score at baseline in the schizoaffective disorder population was 72.1, with an LS mean change at Week 6 of -6.3 (95% CI: -8.1; -4.5; LOCF).

Conclusions: Lurasidone was effective and well-tolerated in treating stable but symptomatic patients with a diagnosis of schizoaffective disorder who were switched from other antipsychotic agents. Study completion rates were similar across the three switch strategies, and treatment failure rates were below 8% for each switch strategy. Switching to lurasidone was associated with minimal changes in weight and metabolic parameters. Limitations include the small sample size and the post-hoc nature of these analyses.

References
1. Essock SM et al. Am J Psych 2006;163:2090-5.
2. Tamminga et al, Am J Psych 2006;163:2032-3

Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 146**

**RISK REDUCTION AND NUMBERS NEEDED TO TREAT TO AVOID METABOLIC SYNDROME: 12-MONTH CARDIOMETABOLIC PARAMETERS CHANGES AMONG SCHIZOPHRENIA SUBJECTS TREAT**

*Lead Author: Krithika Rajagopalan, Ph.D.*
*Co-Author(s): Mariam Hassan, Ph.D., Antony Loebel, M.D., Timothy Niecko, M.S., Andrei Pikalov, M.D., Ph.D.*

**SUMMARY:**

Introduction: Atypical antipsychotics are associated with various degrees of risk for weight gain and metabolic disturbances including metabolic syndrome. Lurasidone, an atypical approved for schizophrenia and bipolar depression may potentially have a lower risk for metabolic syndrome and a lower number of subjects needed to treat (NNT) to avoid one subject developing metabolic syndrome. Differences in metabolic syndrome status based on cardiometabolic parameter changes among subjects with schizophrenia treated with lurasidone or quetiapine XR were examined.

Methods: Data from a 12-month, double-blind, parallel-group, multiregional comparison study of lurasidone (40 to 160 mg/day, flexibly dosed) vs quetiapine XR (200 to 800 mg/day, flexibly dosed) in subjects previously treated with lurasidone or quetiapine XR for 6 weeks were evaluated in this post-hoc analysis. Increased cardiometabolic risk was defined as: BMI >30kg/m2, triglycerides (≥150 mg/dL), fasting plasma glucose ((FPG) ≥100 mg/dL), blood pressure (systolic BP ≥130 or diastolic BP ≥85 mm Hg) and HDL cholesterol (<40 mg/dL in males and <50 mg/dL in females). Metabolic syndrome was defined by the International Diabetes Federation (IDF) as those with a BMI >30kg/m2, plus ≥2 of the above four factors. Cardiometabolic parameters and presence of metabolic syndrome were assessed at study baseline (BL) and endpoint (12 months). Absolute risk reduction (ARR) in metabolic syndrome and the number of subjects needed to treat (NNT) to avoid one patient developing metabolic syndrome on the IDF formula was calculated.

Results: From the ITT population of 256 subjects, data from 111 subjects (lurasidone N=78; quetiapine XR N=33) with a baseline (BL) and a 12 month assessment were included. At BL there were 2 (2.6%) lurasidone and 0 (0.0%) quetiapine XR subjects with metabolic syndrome. At month 12 there were 2 (2.6%) lurasidone and 3 (9.1%) quetiapine XR subjects with metabolic syndrome. The 12-month change from BL showed no additional subjects developing metabolic syndrome with lurasidone whereas 3 subjects with quetiapine XR did. Absolute risk reduction (ARR) in metabolic syndrome with lurasidone was

6.5% and the NNT to avoid a case of metabolic syndrome with lurasidone was 15.
Conclusions: Post hoc analysis from this study showed that treatment with lurasidone is associated with improvement in cardiometabolic parameters and a low NNT to avoid one patient developing metabolic syndrome versus quetiapine XR.
Sponsored by Sunovion Pharmaceuticals Inc.

**NO. 147**

**EFFICACY OF LURASIDONE IN THE TREATMENT OF SCHIZOPHRENIA WITH PROMINENT NEGATIVE SYMPTOMS: A POST-HOC ANALYSIS OF SHORT-TERM TRIALS**

*Lead Author: Nina R. Schooler, Ph.D.*
*Co-Author(s): Josephine Cucchiaro, Ph.D., Robert Goldman, P.hD., Jay Hsu, P.hD., Antony Loebel, M.D., Andrei Pikalov, M.D., Ph.D.*

**SUMMARY:**
Background: Negative symptoms in schizophrenia are associated with impairment in quality of life and functioning. The aim of this post-hoc analysis was to evaluate the efficacy of lurasidone in patients with prominent negative symptoms hospitalized for an acute exacerbation of schizophrenia.
Methods: This post-hoc analysis utilized pooled data from three 6-week, double-blind, placebo-controlled trials (Meltzer, AJP 2011;168;957-67; Loebel, Schiz Res 2013;145:101-9) of patients (N=1206) with an acute exacerbation of schizophrenia who were randomized to fixed, once-daily oral doses of lurasidone in the range of 40-160 mg. Patients with prominent negative symptoms at baseline were identified based on the following criteria: a PANSS negative subscale score ≥25 (median score); and a PANSS positive score <26 (median score). MMRM analyses were performed for change in PANSS total, negative subscale and CGI-S scores. Responder status was evaluated for the PANSS total, defined as reduction from baseline of ≥20%, ≥30%, or ≥40% (LOCF-endpoint).
Results: A total of 247/1206 (20.5%) patients met criteria for prominent negative symptoms. Treatment of the prominent negative symptom group with lurasidone (vs. placebo) was associated with significantly greater week 6 improvement in the PANSS total score (-23.1 vs. -16.2; p<0.01), PANSS-negative subscale score (-6.7 vs. -4.5; p<0.01), and CGI-S (-1.4 vs. -1.0; p<0.01). Treatment of the prominent negative symptom group with lurasidone (vs. placebo) was associated with significantly greater endpoint response using the PANSS total 20% improvement criterion (68.9% vs. 37.9%; p<0.001), 30% criterion (55.9% vs. 28.8%; p<0.001), and 40% criterion (41.6% vs. 22.7%; p<0.001). In the group without prominent negative symptoms, treatment with lurasidone (vs. placebo) was associated with significantly greater endpoint responder rates using the PANSS 20% improvement criterion (64.2% vs. 50.3%; p<0.001), 30% criterion (50.4% vs. 36.6%; p<0.001), and 40% criterion (37.0% vs. 27.4%; p<0.001). The number needed to treat (NNT) was lower for the prominent vs. not prominent negative symptom group using the 20% criterion (NNT, 4 vs. 8), 30% criterion (NNT, 4 vs. 8), and 40% criterion (NNT, 6 vs. 11). Discontinuation due to adverse events, for lurasidone vs. placebo, respectively, was low in both the prominent negative symptom group (5.4% vs. 1.2%) and the group without prominent negative symptoms (5.9% vs. 4.7%). In the prominent negative symptom group, the 3 most common adverse events reported for lurasidone (and greater than placebo) were dystonia (19.5% vs. 3.0%), somnolence (17.7% vs. 3.0%), and akathisia (17.7% vs. 3.0%).
Conclusions: Patients who presented with prominent negative symptoms responded to treatment with lurasidone with significantly improved PANSS total and negative subscale scores. Treatment with lurasidone was well-tolerated in the prominent negative symptom group.
Sponsored by Sunovion Pharmaceuticals, Inc.

**NO. 148**

**IS COGNITIVE OCULOMOTRICITY AN ENDOPHENOTYPE OF SCHIZOPHRENIA?**

*Lead Author: Magali Seassau, Ph.D.*
*Co-Author(s): Jean C. Lamy, PhD., Rémi Gadel, Raphaël Gaillard, M.D., PhD., Marie O. Krebs, M.D., PhD., Isabelle Amado, M.D., PhD.*

**SUMMARY:**
Background: Schizophrenia is a devastating illness, with cognitive abnormalities that begins early before the clinical symptoms. Schizophrenia has a neurodevelopmental component with a genetic determinism. Some abnormalities could also be found in siblings of patients. The purpose of this study is to determine a profile of cognitive oculomotor abnormalities detected in patients with schizophrenia and in healthy first degree siblings of patients, in comparisons of controls. This profile is then tested in a group of Ultra High Risk subjects (UHR) who will be followed-up within one year.
Méthod : 30 stabilized patients (DSM IV-R), 15 non psychotic siblings, and 31 controls matched for age to patients (19-35years old) participated to the study. Symptoms were evaluated for patients with the PANSS. For UHR subjects who experienced prodromal symptoms of psychosis (n=9), the Comprehensive Assessment of At Risk Mental States (CAARMS) was used. Oculomotor tasks proposed were: Prosaccades (with step and overlap conditions), Antisaccades, and visual exploration of emotional faces. Group analyses are assessed for the oculomotor performances.
Results: In patients with schizophrenia, a profile of alterations is found with more anticipatory saccades in the overlap condition ( p<0.04 ), more antisaccade errors ( p<0.001), troubles in the overall dynamic of the saccade (decreased velocity and gain ; p<0.04), poor emotional face exploration with less exploration of the mouth and eyes regions of interest (p<0.002), and poor recognition accuracy of emotions (p<0.04). Also, in siblings, we observed more antisaccade errors (p<0.001), alterations in the dynamic of the saccade (decreased velocity and gain, p<0.05) and differences in the emotional face exploration with more time spent in the eyes compares to the other two groups (p<0.05). The comparison of both patient and sibling oculomotor profiles allow to identifying a putative pattern of alterations for schizophrenia. These putative endophenotypes are now tested in the UHR group. This kind of analysis permits to identify eye movement abnormality profiles that could be linked to a risk for Psychosis.
Conclusions: The exploration of eye movements during saccadic or cognitive tasks provides useful arguments for a sensitive profile of oculomotor alterations which could possibly constitute a trait marker for the disease. This kind of tools could usefully be integrated to the clinical tools already available for

an early detection of the disease. This determination strategy to select a cognitive and oculomotor pattern of alterations in schizophrenia could help to define sensitive and specific biomarkers for the disease, easy to use for more comprehension of the vulnerability to psychosis.

**NO. 149**

**PALIPERIDONE RESEARCH IN DEMONSTRATING EFFECTIVENESS (PRIDE): MANAGING SCHIZOPHRENIA PATIENTS WITH A HISTORY OF INCARCERATION AND SUBSTANCE USE**

*Lead Author: H. Lynn Starr, M.D.*
*Co-Author(s): Larry Alphs, M.D., Ph.D., Lian Mao, Ph.D., Steven Rodriguez, M.S.*

**SUMMARY:**

**Background: The fragmented mental healthcare system in the United States and gaps in care contribute to inadequate management of patients with schizophrenia. Care is often complicated by comorbid medical conditions such as substance use, which is associated with more severe and treatment-resistant schizophrenia, longer hospital stays, and increased risk of criminal justice system (CJS) involvement. Paliperidone Palmitate Research in Demonstrating Effectiveness (PRIDE) study examined the effect of once-monthly paliperidone palmitate (PP) and daily oral antipsychotics (APs) on treatment failure in subjects with schizophrenia and a history of CJS involvement who were receiving antipsychotic treatment. An exploratory analysis examined the impact of substance abuse on treatment failure.**

**Methods: PRIDE is a 15-month, randomized, open-label, multicenter US study comparing PP with oral APs in a community sample of schizophrenia subjects with a history of incarceration (NCT01157351). The primary study endpoint was "time to treatment failure" (defined as any one of the following: arrest/incarceration, psychiatric hospitalization, suicide, treatment discontinuation or supplementation due to inadequate efficacy, safety or tolerability, or increased psychiatric services to prevent hospitalization as determined by a blinded Event Monitoring Board) analyzed by the Kaplan-Meier method with a log-rank test for treatment group difference. An exploratory analysis used the pooled data to examine the effect of substance abuse on treatment failure.**

**Results: Primary Study Outcomes: 444 subjects were included: 226 randomized to PP and 218 to oral APs. PP was associated with a significantly longer time to treatment failure vs oral APs (log-rank P=0.011). Median (95%CI) time was 416 days (285,>450) in the PP group and 226 (147,304) in the oral AP group. The most common treatment-emergent adverse events (AEs) in the PP vs oral AP groups were: injection site pain (18.6%, 0%), insomnia (16.8 vs 11.5%), weight increase (11.9% vs 6.0%), akathisia (11.1% vs 6.9%), and anxiety (10.6% vs 7.3%).**

**Exploratory Effect of Substance Abuse: 264 (59.5%) were substance abusers and 180 (40.5%) were not substance abusers. Median (95%CI] time to treatment failure was 260 days (156,314) in the substance abuse cohort and could not be determined (>450 days) in the no substance abuse cohort. The most common AEs in the substance abuse versus no substance abuse cohort were insomnia (14.8% vs 13.3%), akathisia (10.2% vs 7.2%), and injection site pain (11.0% vs 7.2%).**

**Conclusions: In this clinical trial dataset of schizophrenia subjects with a history of incarceration, PP significantly delayed treatment failure vs daily oral antipsychotics. More than half of the population was identified as substance abusers. An exploratory analysis showed that substance abuse was associated with a shorter time to treatment failure.**

**Support: Janssen Scientific Affairs, LLC**

**NO. 150**

**A DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED WITHDRAWAL STUDY OF LURASIDONE FOR THE MAINTENANCE OF EFFICACY IN PATIENTS WITH SCHIZOPHRENIA**

*Lead Author: Rajiv Tandon, M.D.*
*Co-Author(s): Antony Loebel, M.D., Debra Phillips, A.S., Andrei Pikalov, M.D., Ph.D., David Hernandez, B.A., Yongcai Mao, Ph.D., Josephine Cucchiaro, Ph.D.*

**SUMMARY:**

Objective: To evaluate the efficacy of lurasidone maintenance treatment for schizophrenia.

Methods: Patients aged 18–75 years diagnosed with schizophrenia and experiencing an acute exacerbation were enrolled in the 12-24 week open-label stabilization phase of the trial, during which they received lurasidone (40 or 80 mg/d, flexibly dosed). Those who maintained clinical stability for ≥12 weeks entered the 28-week, double-blind withdrawal phase and were randomized to either lurasidone (initially at their final stabilization dose, then flexibly dosed within the range of lurasidone 40–80 mg/d) or placebo. Due to prespecified unblinded interim analyses, the nominal p value for statistical significance was adjusted from 0.05 to 0.042. The primary efficacy endpoint was time to relapse, analyzed using log-rank and Cox proportional hazards models. Secondary efficacy measures included analysis of covariance (last observation carried forward [LOCF]) of change from baseline in PANSS total and CGI-S scores. Safety assessments included treatment-emergent adverse events (TEAEs) and laboratory measures.

Results: Of 676 patients enrolled in the open-label stabilization phase, 285 met protocol-specified stabilization criteria and were randomized to lurasidone (N=144) or placebo (N=141). Among the patients who completed the open-label phase and were randomized into the double-blind phase, mean (SD) lurasidone dose during the open-label stabilization phase was 67.7 mg/d (14.8 mg/d). Relapse occurred in a greater proportion of patients receiving placebo (58/141 [41.1%]) than lurasidone-treated patients (43/144 [29.9%]). Time to relapse based on Kaplan-Meier survival analysis was significantly longer for lurasidone compared with placebo (log-rank test, p=0.039). Lurasidone was associated with a 33.7% reduction in risk of relapse versus placebo (Cox hazard ratio [95% confidence interval], 0.663 [0.447, 0.983]; p=0.041). Patients receiving placebo demonstrated a worsening in PANSS and CGI-S scores over the double-blind period compared to lurasidone-treated patients (PANSS mean change, +12.4 vs +8.3, p=0.029; CGI-S mean change, +0.7 vs +0.4, p=0.015; LOCF). The percentage of patients reporting any TEAE was similar in the lurasidone (53.5%) and placebo (54.6%) groups. The most commonly reported AEs for lurasidone (with incidence > placebo) during the double-blind phase were anxiety (4.2% vs 2.8%) and back pain (4.2% vs 2.1%). The discontinuation rate due to AEs was 13.9% for lurasidone and 15.6% for placebo. Minimal changes in weight, as well as prolactin, lipid, and glucose parameters

were observed in both groups.
Conclusion: This placebo-controlled, randomized, withdrawal study demonstrated the efficacy of lurasidone maintenance treatment for patients with schizophrenia. Lurasidone was generally well tolerated, with minimal effects on weight and other metabolic parameters.
This study was sponsored by Sunovion Pharmaceuticals Inc.
ClinicalTrials.gov: NCT01435928

**NO. 151**
**ESZOPICLONE FOR INSOMNIA TREATMENT IN CLINICALLY STABLE PATIENTS WITH SCHIZOPHRENIA: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED TRIAL**
*Lead Author: Cenk Tek, M.D.*
*Co-Author(s): Pamela C. DeGeorge, M.D., Sinan Guloksuz, M.D., Andrew D. Krystal, M.D., Laura B. Palmese, Psy.D., Erin L. Reutenauer, B.A.*

**SUMMARY:**
Background: Insomnia is a common problem in schizophrenia, yet not well studied. This results in utilization of antipsychotic polypharmacy and excess metabolic side effect burden. Here, we aimed to investigate eszopiclone, a primary insomnia agent, for treatment of schizophrenia related insomnia in an 8-week double-blind place-controlled efficacy study, followed by a two-week, single-blind placebo period to evaluate rebound and withdrawal.
Methods: In this study, 39 clinically stable patients with schizophrenia or schizoaffective disorder, sleep difficulties at least twice per week in the preceding month, and an Insomnia Severity Index (ISI) score > 10 were randomized to either 3 mg eszopiclone (n = 20) or placebo (n = 19) for 8 weeks. The primary outcome measure was change in weekly-assessed ISI score. Subjective sleep, core schizophrenia symptoms, depression and quality of life were also assessed.
Results: The least square means of ISI decreased more in eszopiclone (mean = -10.7, 95% CI= -13.2; -8.2) than in placebo (mean = -6.9, 95% CI= -9.5; -4.3) with a between-group difference of -3.8 (95% CI= -7.5; -0.2). There were improvements in subjective sleep diary measures in both groups without between-group differences. Depression, schizophrenia, and quality of life measures were similarly not different between groups. Discontinuation rates were similar, and the most common adverse events were unpleasant taste, sedation, dry mouth and headache. There was no evidence of rebound insomnia and clinical worsening during single-blind period.
Conclusion: Eszopiclone stands as a safe and effective alternative for the treatment of insomnia in patients with schizophrenia.

**NO. 152**
**A RANDOMIZED CONTROLLED TRIAL OF LIFESTYLE MANAGEMENT FOR WEIGHT LOSS IN SCHIZOPHRENIA PATIENTS ON ANTIPSYCHOTICS: THE SIMPLE STUDY**
*Lead Author: Cenk Tek, M.D.*
*Co-Author(s): Jessica A. Barber, Ph.D., Carlos M. Grilo, Ph.D., Sinan Guloksuz, M.D., Suat Kucukgoncu, M.D., Laura B. Palmese, Psy.D., Joseph C. Ratliff, Ph.D., Erin L. Reutenauer, B.A.*

**SUMMARY:**
Background: Antipsychotic induced obesity leads to increased morbidity and mortality in schizophrenia. We developed a lifestyle intervention (Simplified Intervention to Modify Lifestyle, Physical activity, and Eating behavior; SIMPLE, www.simpleprogram.org), taking into account cognitive, educational, and social problems observed in schizophrenia. Rule simplicity, frequent repetition, in-situ grocery shopping education, cognitive behavioral techniques, and a food reimbursement program were utilized in a group format for 16 sessions. We aimed to evaluate the effectiveness of SIMPLE for weight loss in patients with schizophrenia in a randomized study.
Methods: This study was a randomized controlled trial of SIMPLE, compared to usual care (TAU) conducted at an urban community mental health center. 137 men and women aged 18 to 70 with DSM-IV diagnoses of schizophrenia or schizoaffective disorder and a body mass index (BMI) of 28 or greater taking antipsychotic medications were randomized (2:1) to SIMPLE or TAU.
Results: SIMPLE group lost significantly more weight (2.14 kg; 95% CI, 1.10-3.17) than TAU group (0.61 kg; 95%CI, 0.44 gain-1.65). Significantly more subjects in SIMPLE lost over 5% of body weight (25% vs. 7%). Metabolic parameters improved but the difference between groups was not significant. SIMPLE participants successfully maintained their weight loss for 6 months post-intervention.
Conclusions: SIMPLE stopped weight gain and provided durable weight loss for schizophrenia patients who continued to receive their medication. It is an easy to use, free program for mental health clinicians in community settings.

**NO. 153**
**CHILDHOOD TRAUMA AND THE RELATION WITH DISSOCIATION IN SCHIZOPHRENIC PATIENTS**
*Lead Author: Nesrin B. Tomruk, M.D.*
*Co-Author(s): Ayce Soydan M.D., Nihat Alpay M.D.*

**SUMMARY:**
Objective: Dissociative symptoms are observed in several psychiatric disorders including schizophrenia and frequently a traumatic experience exists in the previous history. it is aimed to research the frequency of childhood trauma in schizophrenia patients linking the relationship of depression and dissosiciative experience. Method: 80 patients (40 male-40 female) who were diagnosed as schizophrenia according to the DSM-IV disagnostic criteria in Prof. Dr. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology and Neurosurgery, Psychotic Disorders Unit were interviewed. The patients included in the research were evaluated according to the sociodemographic data form, SCID-I form, Childhood Trauma Questionaire (CTQ-28), Dissosiative Experiences Scale (DES), Taxon form of the scale (DES¬Taxon), Calgary Depression Scale For Schizophrenia (CDSS) and Dissociative Disorders Interview Scale (DDIS). Results: The patients included in the research were divided into 2 group s as who have and who do not have childhood trauma. DDIS subgroups, were evaluated according to DES, DES- Taxon and CDSS. When the group s were compared according to childhood trauma existence, there was no significant difference between the group s in terms of sociodemographic data. There was also no significant relationship between illness related data of schizophrenia and the trauma experience. The research mainly targets, to analyze the relation between dissociative experience in schizophrenia patients who

have childhood trauma. When the patients who have childhood trauma, disociative experience and the severity of dissociation are researched including the relation between each other acccording to CTQ-28, DES, DES- Taxon, CDSS and DDIS scales, it is specifically observed that trauma experience has relation with depression and borderline personality. The existence of emotional abuse is the most correlated trauma type with dissociative experience and depression after total score in childhood trauma questionaire. Conclusion: The impact of the existence of childhood trauma in to dissociative symptoms and the impact of their relation in to other symptoms in schizophrenia patients are clinically very important as well as their theoretical perspective. Although the results that we have reached is not enough to find a methodological approach to these questions, the significant relation between the types of trauma and dissosiative symptoms are correlated with previous researches. This information just like in previous researches support us in asking past trauma history during psychiatric examination even though the patient suffers from destructive illness such as schizophrenia where the perception of with environment distorted.

**NO. 154**

**FIRST IMPRESSIONS AND IMPLICIT EMOTION RECOGNITION IN SCHIZOPHRENIA**

*Lead Author: Fabien Tremeau, M.D.*
*Co-Author(s): Daniel Antonius, Ph.D., Alexander Todorov, Ph.D., Sang Han Lee, Ph.D., Dolores Malaspina, M.D., M.S.P.H., Daniel C. Javitt, M.D., Ph.D.*

**SUMMARY:**
Background: When looking at people's faces, we immediately form impressions about their personality traits, and research has shown that first impressions are highly reliable among observers and across races and cultures. First impressions rely heavily on facial features and emotion expressions. Even when presented with neutral faces, we implicitly rely on subtle emotion expressions to guide our judgments. First impressions have rarely been studied in schizophrenia, and their reliance on subtle emotion expressions is unknown.
Methods: Eighty-one individuals with schizophrenia or schizoaffective disorder and 62 control subjects completed a computer task with 30 well-characterized neutral faces (each face's resemblance to an expression of anger, disgust, fear, happiness, sadness or surprise was calculated with the use of a computerized vector program). Participants rated each face on 10 trait judgments: attractive, mean, trustworthy, intelligent, dominant, fun, sociable, aggressive, emotionally stable and weird. All patients were also assessed on level of psychopathology, and the Independent Living Scales was used to measure everyday problem-solving skills.
Results: Correlation and factor analyses showed that patients' and controls' trait ratings had similar structure. However, patients gave higher ratings for attractive, aggressive, dominant, fun, mean and sociable traits than controls. Patients based their trait ratings on subtle emotion expressions in a similar pattern as controls: both groups relied mostly on expressions of happiness, fear and anger, but patients to a lesser extent. Patients' negative symptoms negatively correlated with "trustworthy" and "attractive" ratings, and the extent to which patients used subtle fear expression was linked to their functional skills.
Conclusion: The two surprising results of our study were: 1) Patients with schizophrenia or schizoaffective disorder were not indifferent to others: they rated neutral faces higher in positive and negative personality traits than controls. 2) Patients were able to implicitly detect very subtle emotional expressions and differentiate all negative emotions, and they were able to use those subtle emotion expressions to form impressions in a similar pattern but to a lesser extent than controls. Moreover, deficits in implicit recognition of fear were linked to functional skills.

**NO. 155**

**PARANOID DELUSIONAL DISORDER FOLLOWS SOCIAL ANXIETY DISORDER (SAD) IN A LONG-TERM FOLLOW-UP CASE SERIES**

*Lead Author: Andre B. Veras, Ph.D.*
*Co-Author(s): Jeffrey P. Kahn, MD, Dolores Malaspina, MD, MSPH, Antonio E. Nardi, PhD*

**SUMMARY:**
SAD patients may have self-referential ideas and share other cognitive processes with paranoid patients. From an evolutionary perspective, SAD may represent a presumption of inferior status in the eyes of others, and with concerns about mistreatment superiors.
Method Case series of young SAD patients who had paranoid presentations and were followed for a long term.
Case 1 SAD and depressive symptoms reduced with SSRI and clonazepam. Even in abstinence from crack-cocaine for a month, he became unusually concerned about neighbors' opinions. He believed that local youths, with whom he had previously been involved in physical fights, mocked and teased him. He was admitted to hospitals three times in the following three years. After remission of paranoid delusions, he developed apathy, social isolation and poor facial modulation on risperidone and bupropion.
Case 2 During the treatment for SAD complains he developed concerns about travelling alone on the streets, which gradually intensified to a strong impression that neighbors and passers-by laughed and made comments that questioned his sexual orientation. He didn't tolerate any standard antipsychotic because of neck dystonia, and after four years his delusions improved on sulpiride. After remission of psychosis, he kept isolated and said that his favorite avocation is watching a TV program for children.
Case 3 SAD and some panic anxiety responded to fluoxetine and clonazepam, but left treatment and psychotherapy after two years. He returned 14 years later, largely off medication. He thought that the television talked about him, and rejected doctors who thought him "paranoid". On intermittent olanzapine and clonazepam he became less outwardly guarded and suspicious. He became even less guarded, cheerful, affectively more reactive, and more comfortable in relationships when he accepted fluoxetine. Medication non-compliance episodes were associated with guardedness and concerns about the CIA.
Case 4 An SSRI brought some relief to SAD symptoms, but was discontinued. His condition worsened, despite repeated hospitalizations. Anti-psychotics alone brought little improvement for his guardedness and ideas of reference. He presented some years later essentially mute, a hood over his eyes, and making no eye contact. On anti-psychotic, fluoxetine and buspirone he

became less guarded, with less ideas of reference and started psychotherapy. Over a year's time, he gradually spoke more, better interacted, and worked steadily at a retail job. He still largely spoke in one or two word answers.
Conclusion: Patients improved their psychotic symptoms with symptomatic treatment, although some had a better improvement when adjunctive SSRIs also targets the SAD. Regarding evolutionary theories, it can be hypothesized that when conscious modulation of SAD is reduced by the hypofrontality of psychotic disorders, then exaggerated SAD emerges as paranoid delusional disorder, with prominent ideas of reference.

**NO. 156**

**COMPARATIVE OUTCOMES AFTER SWITCHING FROM RISPERIDONE LONG-ACTING INJECTABLE TO PALIPERIDONE LONG-ACTING INJECTABLE OR ORAL ANTIPSYCHOTICS**

*Lead Author: Erica Voss, M.P.H.*
*Co-Author(s): Larry Alphs, M.D., Ph.D., David Hough, M.D., Patrick B. Ryan, Ph.D., Paul E. Stang, Ph.D.*

**SUMMARY:**

Introduction: Symptom relapse, resulting in hospitalization or emergency department (ED) visits, is an outcome of interest in the treatment of schizophrenia. Although it is not uncommon to switch between antipsychotic (AP) medications to forestall an impending relapse, evidence suggests that, under some circumstances, switching medications may put patients at greater risk for relapse. This report examines the relapse risk following switch from risperidone long-acting injectable (RLAI) to another long-acting injectable AP (paliperidone palmitate [PP]) versus switch to an oral AP.
Methods: The Truven MarketScan Multi-State Medicaid (MSM) database, which captured medical and pharmacy claims for 11.6M beneficiaries between 2006 and 2011, was used to compare relapses (measured by schizophrenia-related inpatient hospitalizations and ED visits) following switches from RLAI. New user cohorts for these 2 groups were created based on the first incidence of exposure to the "switched to" drug. These groups were balanced using 1-to-1 propensity score matching. Patients were required to have a prior diagnosis of schizophrenia and an observed switch in therapy on or after July 31, 2009 (US approval date for PP). Time-to-event analysis was used to assess schizophrenia-related inpatient admissions or ED visits.
Results: 187 patients who switched from RLAI to PP were identified, along with 128 patients who switched from RLAI to an oral AP. Propensity score modeling was used to select 5 important predictors of treatment: age, number of concomitant medications, number of prior outpatient visits, number of schizophrenia-related visits, and number of days on antipsychotic treatments. Matching diagnostics suggest that the cohorts were sufficiently balanced for all modeled covariates and most other unmodeled covariates. The final matched cohort included 109 patients who switched to PP and 109 patients who switched to an oral AP agent.
Patients who switched from RLAI to PP had fewer events (27 vs 30), had longer time to an event (mean of 72 vs 44 days), remained on the new medication longer (mean of 236 vs 126 days), and had lower risk of relapse (HR 0.58, 95% CI 0.34-0.99, P=0.047) compared with those switched from RLAI to an oral AP.
Conclusions This claims database study of real-world patients with schizophrenia suggests that switching from RLAI to PP may be associated with lower risk for relapse and longer duration of therapy compared with switching to oral AP. Given the potential sources of error in observational studies and the extent to which the risk of residual confounding would impact the findings, these results cannot be viewed as definitive and should be confirmed by evaluations in other settings.
Support: Janssen Scientific Affairs, LLC

**NO. 157**

**ATTITUDES TOWARDS LONG-ACTING INJECTABLE ANTIPSYCHOTICS (LAI) IN FIRST EPISODE PSYCHOSIS (FEP)**

*Lead Author: Nishardi Tharu Wijeratne, M.D., M.H.Sc.*
*Co-Author(s): Ranjith Chandrasena MD, FRCPC*

**SUMMARY:**

Introduction
Research indicates that psychiatrists offer Long acting injectibles (LAI) to only 35% of eligible patients and treat less than 20% of eligible patients with LAI. This poster will discuss current evidence on attitudes towards LAI in FEP (First Episode Psychosis) and explore attitudes towards LAI in patients attending an Early Psychosis clinic
Methodology
Applying qualitative methodology, 13 FEP patients who had never been on LAI were interviewed using semi-structured interviews. Informed consent was obtained from individual participants and local REB approval obtained for the project. Enablers and barriers for using a LAI were explored. Using grounded theory, data was analyzed and reduced to key themes which are described.
Results
Enablers for using LAI in FEP include safety; convenience; reduction of stigma and trust in the treatment team. Barriers include side effects; lack of personal control; flavour of suspicion towards injections and alluding to drugs of abuse.
Discussion
Strengths of the study include its qualitative nature which allows exploration of patient experience and attitudes. Since the patient group is a LAI naïve young adult group, a unique perspective is obtained. Limitations of the study include low generalizability due to the very specific patient population. . Patients' level of functioning and current symptamatology was not assessed which may also limit the usefulness of data.
Conclusion
There is a relationship between attitudes, prescribing habits and patient acceptance of LAI in FEP. Previously unexplored patient factors affecting uptake of LAI include medication safety, concept of stigma, suspiciousness towards LAI and relationship with drugs of abuse. Stakeholder attitudes provides a window of opportunity to unravel underutilization of LAI in FEP.

**NO. 158**

**EFFECT OF SELF-ADMINISTERED BREMELANOTIDE ON SEXUAL INTEREST AND DESIRE IN PREMENOPAUSAL WOMEN WITH FEMALE SEXUAL DYSFUNCTION**

*Lead Author: Anita H. Clayton, M.D.*
*Co-Author(s): Jeffrey Edelson, M.D., Robert Jordan, B.Sc., P.M.P.*

**SUMMARY:**

Introduction: The Sexual Interest and Desire Inventory-Female

(SIDI-F) is a validated clinician-administered instrument designed to assess the severity of hypoactive sexual desire disorder (HSDD) in women. Bremelanotide (BMT), a novel melanocortin-receptor-4 agonist, is being developed as a treatment for female sexual dysfunction (FSD).
Hypothesis: BMT improves sexual interest and desire in women with FSDs as assessed by the 13-item SIDI-F.
Methods: After screening and a single-blind (SB) placebo month, premenopausal women with FSDs were randomized to double-blind (DB) placebo or BMT for 12 weeks of at-home self-dosing. Exploratory efficacy measures were analyzed using the SIDI-F which was completed during each of the prescribed clinic visits. A threshold score of 33 is associated with 94.7% sensitivity and 93.4% specificity for severity of HSDD.
Results: Of 1,142 screened subjects, 397 were randomized and 327 completed 1 month of DB study-drug use at home. The change from baseline (SB period) to end of study in the total SIDI-F score was significantly greater with BMT 1.75 mg vs placebo (8.5 vs 4.7, respectively; P=0.0219). Additionally, the increase with BMT 1.75 mg relative to placebo was significantly greater for scores related to desire frequency (item 4; 0.9 vs 0.5, BMT vs placebo; P=0.0480), arousal frequency (item 10; 0.5 vs 0.2, BMT vs placebo; P=0.0474), arousal ease (item 11; 0.7 vs 0.3, BMT vs placebo; P=0.0018), arousal continuation (item 12; 0.4 vs 0.1, BMT vs placebo; P=0.0247), and orgasm (item 13; 1.0 vs 0.4, BMT vs placebo; P=0.0173). Differences between BMT and placebo trended toward significance in scores related to affection (item 5; 0.4 vs 0.1, BMT 1.75 mg vs placebo; P=0.0759) and desire distress (item 7; 0.7 vs 0.4, BMT 1.25 mg vs placebo; P=0.0596). There was no difference between BMT and placebo in the change from baseline in scores for the satisfaction with relationship (item 1), receptivity (item 2), initiation (item 3), desire satisfaction (item 6), thoughts positive (item 8), and erotica (item 9).
Conclusions: The robust efficacy of as-needed treatment with BMT was confirmed using the SIDI-F. The effect was most prominent on SIDI-F items related to desire and arousal. These results corroborate and support previous findings showing a clinically and statistically significant improvement in sexual function with on-demand BMT in women with FSDs.
Discussion: Previously reported data support BMT efficacy in both episodic and monthly recall measurements. Improvement in the desire and arousal aspects of sexual function are the primary drivers of efficacy as demonstrated with the total score SIDI-F. Behavioral patterns such as receptivity, initiation, and thoughts about sex may not show improvement because these items may have been stable upon entry into the study or may take longer to change in response to improvements in desire and arousal.

**NO. 159**

**RELIABILITY AND VALIDITY OF THE FEMALE SEXUAL DISTRESS SCALE-DESIRE/AROUSAL/ORGASM INSTRUMENT IN A PHASE 2B DOSE-RANGING STUDY OF BREMELANOTIDE**

*Lead Author: Leonard R. DeRogatis PhD*
*Co-Author(s): Jeffrey Edelson, M.D., Dennis A. Revicki, Ph.D.*

**SUMMARY:**

Introduction: Bremelanotide (BMT) is a novel melanocortin-receptor-4 agonist currently in clinical development for the treatment of female sexual dysfunction (FSD). We evaluated the reliability and validity of the Female Sexual Distress Scale-Desire/Arousal/Orgasm (FSDS-DAO) as an instrument to assess the efficacy of BMT in women with FSDs.
Hypothesis: FSDS-DAO is a valid instrument to assess therapeutic response in women with FSD.
Methods: After screening, premenopausal women with hypoactive sexual desire disorder and/or female sexual arousal disorder received an in-clinic subcutaneous (SC) placebo dose followed by 4 weeks of SC placebo self-dosing (baseline). Subjects were then randomized to double-blind placebo or BMT 0.75, 1.25, or 1.75mg for 12 weeks of at-home self-dosing. An exploratory efficacy measure was the change from baseline to end of study (EOS) in the FSDS-DAO. Cronbach's alpha and Spearman's correlation were calculated to assess internal consistency reliability and test-retest reliability, respectively. Construct validity was evaluated by examining the correlation of the FSDS-DAO total score with the Female Sexual Encounter Profile-Revised, Female Sexual Function Index (FSFI) subscales and total score, Global Assessment Question (GAQ) item scores, and number of sexually satisfying events (SSEs) at baseline and EOS using Spearman's rank correlation coefficients. The ability of FSDS-DAO scores to discriminate according to disease severity was assessed using general linear models with Scheffe's post hoc comparisons.
Results: Mean change from baseline to EOS in FSDS-DAO total score was greater with BMT 1.75mg (-13.1; P=0.0133) and 1.25/1.75mg pooled (-11.1; P=0.0360) compared with placebo (-6.8). Cronbach's alpha was >0.9 at each visit. Spearman's correlation between the FSDS-DAO scores at screening and after placebo was 0.62 (P<0.001), indicating acceptable test-retest reliability. All correlations of the FSDS-DAO total score with previously validated questionnaires were statistically significant at baseline and EOS. Mean FSDS-DAO total score was significantly higher in women reporting <2 vs ≥2 SSEs at EOS (29.4 vs 17.9, respectively; P <0.001). Severity of sexual dysfunction, assessed by the FSFI subscales and total score, was linearly correlated with FSDS-DAO total score at baseline and EOS. The FSDS-DAO discriminated at baseline and EOS between scores reflecting worsening (1-3), no change (4), and improvement (5-7) on GAQ items related to satisfaction with arousal (GAQ #1) and desire (GAQ #2) and patient's self-assessment of benefit (GAQ #3).
Conclusions: The FSDS-DAO demonstrates internal consistency and test-retest reliability, and construct and discriminant validity. Thus, the FSDS-DAO is a reliable and valid measure to assess sexual-related distress in women with FSDs.
Discussion: The addition of questions regarding arousal and orgasm to the original FSDS-R retains the reliability and validity of the measure.

**NO. 160**

**CHILDHOOD TRAUMA IN PATIENTS WITH VAGINISMUS**

*Lead Author: Nesrin B. Tomruk, M.D.*
*Co-Author(s): Muberra Kilic M.D., Ejder Yildirim M.D., Nihat Alpay M.D.*

**SUMMARY:**

OBJECTIVE: Vaginismus is a common sexual problem in Turkey. There is limited information on childhood abuse in women with vaginismus. The aim of this study is to determine the incidence of vaginismus in women with childhood abuse. METHOD: Fifty patients diagnosed with vaginismus who were admitted to Ba-

kirkoy Research and Training Hospital for Psychiatry, Neurology and Neurosurgery, Sexual Dysfunction Clinic with vaginismus problems and 50 control subjects not reporting any problem in sexual function according to DSM-IV-TR criteria were enrolled in this study. Sociodemographic and Clinical Interview Form, GRISS (Golombok Rust Inventory of Sexual Satisfaction), Childhood Trauma Questionnaire, Traumatic Experiences Scale and PCL-C Scale (Post Traumatic Stress Disorder Checklist-Civilian Version) were applied to the groups and results were evaluated statistically. RESULTS: According to the PCL-C scale the trauma incidence was significantly higher in the group with vaginismus. The Childhood Trauma Scale revealed that the total and average scores of physical and sexual abuse were significantly higher in the vaginismus group. In the evaluation of childhood abuse with six sub-scales of the Traumatic experiences scale, a significant difference was determined in the vaginismus group in terms of neglect and abuse, physical abuse, sexual harassment and abuse. CONCLUSION: The rate of childhood abuse in women with vaginismus is significantly higher. Childhood emotional, physical and sexual abuse is an important factor in vaginismus aetiology.

**NO. 161**

**SLEEP DISTURBANCES AND HEADACHE PATTERNS OF ROTATING SHIFT AND DAYTIME WORKING NURSES IN A GENERAL HOSPITAL**

*Lead Author: Kim Byoungjo, M.D., Ph.D.*
*Co-Author(s): Seung Ho, Choi MD, Hun Jeong Eun MD PhD DBA*

**SUMMARY:**

Background : Shift work disorder occurs when you have difficulties adjusting to a work schedule that takes place during a time which most people sleep. Shift work disorder causes you to have trouble sleeping or be severely tired. The quality of sleep may be poor, and you may wake up feeling unrefreshed. You may feel fatigued or exhausted. This can hurt your performance at work, and can put you at risk for making a costly mistake or getting injured on the job. The symptoms of shift work disorder usually last as long as you keep the shift work schedule. The sleep problems tend to go away once you begin sleeping at a normal time again. Some people may have sleep problems even after the shift work schedule ends.
Objective : The aims of this study are to compare sleep disturbances and headache patterns between rotating shift and daytime working nurses.
Methods : 1. Samples – Recruited from volunteer nurses working in a general hospital, 2. Data collections, Demographic data –sex, age, height, body weight(BW), education, marital status, employed years, Independent Variable - Working type(Rotating Shift, Daytime), Dependent Variable- BMI(Body Mass Index), Headache type, Headache frequency, Headache intensity(VAS), BDI(Beck depression Inventory), GSAQ(Global Sleep Assessment Questionnaire ), 3. Normality test – Kolmogorov-Smirnov test and Shapiro-Wilk test , 4. Hypothesis testing- Nonparametric test; Mann-Whitney test , 5. IBM SPSS Statistics 20.
Results : 1. Demographic data; samples - rotating shift (RS) working nurses 37, daytime(D) working nurses 47, age –RS 32.41±8.37, D 38.32±7.547(p=0.000), sex- women(both group), BW- RS 52.27±6.573, D 54.06± 6.291(p=0.059), Height - 1.56 ± 0.499(both), BMI- RS 20.365± 2.5781, D 21.091± 2.2979, Education-RS 15.84± 1.068, D 15.49± 1.943, employed years-RS 10.65± 7.540, D 6.83± 6.019 (p=0.209). 2. Normality test : Kolmogorov-Smirnov test and Shapiro-Wilk test – no normal distribution, 3. Mann-Whitney test- exact significance(1-tailed), Headache type p=0.030, Headache frequency p=0.007, Headache intensity(VAS) p= 0.209, BDI p=0.006, GSAQ[Insomnia p=0.000, Hypersomnia p=0.057, Excessive daytime sleepiness p=0.000, shift work p=0.003, snoring p=0.510, sleep apnea p=0.056, restless leg syndrome p=0.395, periodic leg movement disorder p=0.249, REM sleep behavior disorder p=0.262, other sleep disturbance factors p=0.051], depression-anxiety p=0.007
Conclusion : The above results show statistically significant differences that the rotating shift work produce many more sleep problems and headaches than daytime working. The rotating shift group have multiple somatic symptoms and poor sleep qualities as compared with the daytime group.

**NO. 162**

**OCCUPATION AND SEASONAL SLEEP CHANGES IN THE OLD ORDER AMISH**

*Lead Author: Gopinath Gorthy, M.D.*
*Co-Author(s): Uttam K. Raheja,M.D., Sarah H. Stephens,Ph.D, Gloria M. Reeves,M.D, Toni I. Pollin,Ph.D, Kathleen Ryan,M.P.H, Hira Mohyuddin, Aamar Sleemi,M.D, Gagan Virk,M.D., Nancy Weitzel,L.P.N, Soren Snitker,M.D., Braxton D. Mitchell,Ph.D, Alan R. Shuldiner,M.D., Teodor T. Postolache,M.D.*

**SUMMARY:**

Background: In photoperiodic animals seasonal physiological and behavioral changes are triggered by seasonal changes in day length. Artificial bright light could reduce the effect of short days in modern humans. Seasonal changes in sleep duration in the Old Order Amish, who are culturally prohibited from using bright electric light in their homes have been reported but the effect of occupational exposure to light was not previously accounted for.
Methods: Occupation was categorized based on natural light exposure in four strata. Seasonal differences in sleep duration on the Seasonal Pattern Assessment Questionnaires were compared across occupational strata in 302 Amish men with ANOVAs and posthoc t-tests.
Results: Average winter-summer sleep duration difference was higher in those with predominantly outdoor occupations. (p=0.03).
Conclusion: Limitations include self reported sleep duration and no actual measurement of light exposure. The results support an environmental contribution to seasonal variation in sleep duration.

**NO. 163**

**CLINICAL PROFILE OF A 20/15MG DOSE OF SUVOREXANT, AN OREXIN RECEPTOR ANTAGONIST, OVER 3 MONTHS IN PHASE 3 TRIALS OF PATIENTS WITH INSOMNIA**

*Lead Author: W. Joseph Herring*
*Co-Author(s): Kathryn M. Connor, Neely Ivgy-May, David Michelson, Duane Snavely , Ellen Snyder*

**SUMMARY:**

Introduction: Suvorexant is an orexin receptor antagonist (ORA) being investigated as a potential first-in-class treatment for insomnia. In contrast to GABA-modulating hypnotics such as

zolpidem which have a general inhibitory effect in the brain, ORAs selectively target the brain's wake system to promote sleep. Two age-adjusted (non-elderly/elderly) suvorexant dose regimes of 40/30mg and 20/15mg were evaluated in Phase 3 trials. Although the original intent was to study 40/30 mg as the primary dose, the FDA's current emphasis is on use of the lowest effective dose for insomnia, and we therefore report here results from analyses of pooled data for the 20/15mg dose.

Methods: Analysis of pooled Phase 3 efficacy data was pre-specified and included data from 2 similar randomized, double-blind, placebo-controlled, parallel-group, 3-month trials in non-elderly (18-64y) and elderly (≥65y) patients with primary insomnia. Two doses were evaluated within each age group: 40mg or 20mg for non-elderly and 30mg or 15mg for elderly. The age dose-adjustment was to match for pharmacokinetic exposure. By design, fewer patients were assigned to 20/15mg than 40/30mg or placebo. An optional 3-month double-blind extension was included in 1 trial. Both trials included a double-blind placebo-controlled run-out at the end of treatment to assess rebound insomnia and withdrawal effects. Efficacy was assessed by subjective patient-reported outcomes(PRO), and by objective polysomnographic (PSG) endpoints in a subgroup of approximately 75% of patients. In addition to routine labs and adverse event(AE) reports, the safety evaluation included systematic assessment for special considerations including residual effects, abuse potential, suicidality, and AEs possibly related to cataplexy. Analysis of pooled Phase 3 safety data was prespecified as part of an integrated safety summary for regulatory submission and included data from the two 3-month trials as well as 3-month placebo data from a 1-year safety trial of 40/30mg.

Results: Of 493 patients who received suvorexant 20/15mg and 767 who received placebo in the 3-month trials, 88% on suvorexant and 87% on placebo completed 3 months of treatment. Suvorexant improved PRO and PSG measures of sleep maintenance and onset compared to placebo at the earliest pre-specified timepoints (Week-1 for PRO and Night-1 for PSG measures) and Month-3 ($p<0.01$), except for the PSG onset endpoint at Month-3 ($p=0.06$). Suvorexant was generally well-tolerated with few discontinuations due to AEs (3.0% vs 4.9% for placebo). The most frequent AE was somnolence (6.7% vs 3.0% for placebo) which was generally transient and mild-to-moderate in intensity. No clinically important rebound insomnia or withdrawal was observed after abrupt treatment discontinuation. Suvorexant was well-tolerated during the 3-month extension.

Conclusion: Suvorexant 20/15mg was effective and well-tolerated over 3 months in non-elderly and elderly adult patients with insomnia.

**NO. 164**

**SUBJECTIVE SLEEP QUALITY AND SUICIDAL IDEATION AMONG COLLEGE STUDENTS IN BOMBAY: A STUDY OF 3300 STUDENTS**

*Lead Author: Salima Jiwani, M.B.B.S.*

*Co-Author(s): Shamsah B. Sonawalla, M.D., Meghana Srinivasan, M.A, Rajesh M. Parikh, M.D.*

**SUMMARY:**

Objective: The purpose of this study was to assess subjective sleep quality and suicidal ideation among college students in Bombay.

Method: 3300 students across two colleges in the Greater Bombay area were screened for subjective sleep quality, depressive symptoms and suicidal ideation (mean age: 19.2 + 1.1; 66.8 % women; Arts: 45%, Science: 30.3%, Commerce: 15.6%, Management Studies: 9.1%).

After obtaining written, informed consent, the Pittsburgh Sleep Quality Index (PSQI) and the Beck Depression Inventory (BDI) were distributed to all students. Students who scored > or =16 on the BDI, or > or =1 on BDI item #9 (suicidal ideation item), and who consented to be interviewed, were evaluated using the MDD module of the Structured Clinical Interview for DSM-IV-TR (SCID-P). "Poor sleeper" was defined as a student with a PSQI global score of > or = 5. Significant depressive symptoms were defined as a score of >or = 16 on the BDI. Chi square tests and logistic regression were used for data analysis.

Results:

17.2% of the students scored >or = 16 on the BDI. There was no significant difference in BDI total scores across age, gender and year in college. Mean total BDI scores were found to be highest among management and science students compared to commerce and arts students ($p<0.0001$).

17% of the students reported suicidal ideation (as assessed by BDI item 9 score >or= 1). There was no significant difference in suicidal ideation across age, year in college and stream of study. Significantly more women reported suicidal ideation compared to men (18.8% vs 13.6%; chi square = 13.81, $P<0.001$).

40.2% students were found to have significant sleep disturbances as assessed by PSQI global scores of >or= 5. Gender, year in college and age did not have a significant relationship with sleep disturbances. Stream of study correlated significantly with global PSQI scores:

49% management students, 42.2% science students, 42.1% arts students, and 28.9% commerce students reported significant sleep disturbances (chi-square= 33.12, $P<0.01$). Students with poor sleep quality (PSQI global score >or= 5) had a nearly two times higher probability of reporting suicidal ideation (BDI#9 score > or =1) compared to those without poor sleep quality, after controlling for age, gender, year in college, stream of study and total BDI scores (odds ratio=1.89).

Conclusion: A substantial percentage of students in this sample reported experiencing significant sleep disturbance, which in turn was associated with a higher risk of suicidal ideation. This study highlights the importance of screening for sleep disturbance and suicidal ideation among college students, and the need to plan and implement appropriate intervention strategies in this population.

**NO. 165**

**ELECTRONIC DISPLAYS WITH 454 NM AND 446 NM BLUE WAVE LIGHTS HAVE DIFFERENT EFFECT ON MELATONIN SUPPRESSION AND COGNITIVE FUNCTION**

*Lead Author: Yunhye Oh, M.D.*

*Co-Author(s): Jung-Yoon, Heo, M.D., Heejun, Yoon, M.D., Ikki, Yoo, M.D., Min-Gyeong Jo, Jong-In Baek, Won-Sang Park, Hak Sun Kim, Bum-Hee Yu, M.D., Ph.D.*

**SUMMARY:**

Introduction: Light is a primary stimulus for regulating circadian rhythms through suprachiasmatic nucleus. The 454 nm blue wave light has been known to suppress melatonin secretions

and shift circadian rhythms in human beings. Thus, long-term use of electronic displays with 454nm blue wave lights may be related to increased risk for sleep problems and daytime cognitive impairment. We examined to compare traditional electronic displays with 454 nm blue wave light with new electronic displays with 446nm blue wave lights in terms of melatonin suppression and cognitive function in a normal population. Method: Subjects (n=5) were all healthy males who were from 20 to 40 years old. They were hospitalized for the experiment for 3 days twice. During 2nd day in the first hospitalization, they were randomly allocated to use the electronic displays with 446 nm or 454 nm blue wave lights from 19:30 to 23:00 p.m. Melatonin levels and visual and auditory controlled continuous performance test (CPT) were measured before and after using the electronic displays. After 2 weeks, during 2nd day in the second hospitalization, they were required to use the electronic displays with opposite blue wave lights from 19:30 to 23:00 p.m. Melatonin levels and visual and auditory controlled CPT were measured again before and after using the electronic displays.
Results: The 454 nm electronic display group showed 1 hour delay in DLMO50 (dim light melatonin onset 50) than the 446 nm electronic display group. Compared with the 454 nm electronic display group, the 446 nm electronic display group showed significant improvement in decreased reaction time (t=2.534, p=0.032) in visual and auditory controlled CPT. Conclusion: These findings suggest that electronic displays with 454 nm and 446 nm blue wave lights may have different effect on melatonin suppression and cognitive function in a normal population.

**NO. 166**

**EFFICACY OF TASIMELTEON TREATMENT IN TOTALLY BLIND INDIVIDUALS WITH NON-24-HOUR SLEEP-WAKE DISORDER**

*Lead Author: Rosarelis Torres, Ph.D.*
*Co-Author(s): Steven W. Lockley, Ph.D., Marlene Dressman, Ph.D., Christian Lavedan Ph.D., Changfu Xiao, Ph.D., Louis Licamele, Ph.D., and Mihael Polymeropoulos, M.D.*

**SUMMARY:**

Introduction: The majority of totally blind individuals exhibit Non-24-Hour Sleep-Wake Disorder (Non-24) due to the inability to perceive light and reset the circadian pacemaker in the SCN. Non-24 is a serious circadian disorder with no FDA-approved treatment. Tasimelteon, a dual melatonin receptor agonist with selective agonist activity for both melatonin receptors, is in development for the treatment of Non-24 in the totally blind. Methods: Two phase III studies assessed the safety, efficacy and maintenance of effect of daily tasimelteon treatment (20mg taken one hour prior to bedtime at a fixed clock time). Circadian period was assessed from urinary 6-sulfatoxymelatonin (aMT6s) and cortisol. Clinical assessments included a Non-24 Clinical Response Scale (N24CRS), nighttime and daytime sleep, and Clinical Global Impression of Change (CGI-C). Results: In the entrainment study (SET) (n=84), tasimelteon entrained the circadian clock as measured 2 to 6 weeks after initiating treatment compared to PBO (aMT6s: 20.0 vs. 2.6%; cortisol: 17.5 vs. 2.6%, respectively; p<0.05). In addition, tasimelteon induced a greater clinical response (defined as entrainment plus improvement on the N24CRS) (23.7 vs. 0%), improved CGI-C (2.6 vs. 3.4), increased sleep in the worst quartile of nights (LQ-nTST) (57 vs. 17 mins), decreased excessive daytime sleep in the worst quartile of days (UQ-dTSD) (46 vs. 18 mins), and corrected the midpoint of sleep timing (MoST) by 21 mins/day compared to PBO (p<0.05). Multiple sensitivity analyses for the entrainment rate were conducted including assessing τ across both SET and REST where appropriate, or applying more stringent quality assessments for assessment of τ. These analyses indicate the actual rate of entrainment is at least 50%, consistent with the entrainment rate during the open-label run-in phase of the randomized withdrawal study, RESET. In RESET (n=20), tasimelteon-entrained patients were randomized to continue treatment or withdrawal to PBO. Tasimelteon maintained entrainment compared to PBO (aMT6s: 90 vs. 20%; cortisol: 80 vs. 20%). The difference in PBO vs. tasimelteon treated patients for LQ-nTST and UQ-dTSD favored tasimelteon by 67 and 59 mins/day, respectively, and MoST was different by 36 mins/day (p<0.05). Tasimelteon was safe and well-tolerated in both studies. Conclusion: Tasimelteon entrained the circadian pacemaker in at least 50% of patients with Non-24 and caused significant improvement in multiple clinical measures of sleep, wake and global functioning. Discontinuation of tasimelteon abolished these benefits demonstrating that continued treatment is required to maintain entrainment. Discussion: The individual nature of circadian rhythms, including cycle length and phase at treatment initiation, may affect entrainment rate. While these studies were not designed to address the time to response, adequate treatment duration is likely to be important in clinical practice. Sponsored by Vanda Pharmaceuticals.

**NO. 167**

**ASSERTIVE COMMUNITY TREATMENT: FACTORS CONTRIBUTING TO THERAPEUTIC SUCCESS**

*Lead Author: Charles B. Beasley Jr., M.D.*
*Co-Author(s): Michael Serby, MD, Elena Bruck, MD, Sun Young An, CRC, David Lucido, PhD*

**SUMMARY:**

BACKGROUND
Assertive Community Treatment (ACT) programs offer community-based treatments to chronic
severely mentally ill patients. The ACT program at Beth Israel Medical Center has consistently
demonstrated decreases in utilization of resources as manifest by fewer hospitalizations and
ED visits. We explored factors that may underlie this success, including alliance with treatment
team, substance abuse, use of decanoate antipsychotics, and AOT mandated care.
METHODS
A chart review was done for all Beth Israel ACT patients who had been under care for >6
months to determine the number of ED visits and hospitalizations in the 6 month period before
and after admission to ACT. Substance abuse history, AOT-mandated status to the ACT
team, and use of decanoate antipsychotics at time of admission as well as the number of failed
outreach attempts in the first 6 months of care were also recorded. Number of failed outreach
attempts was presumed to be a quantifiable measure of alliance with the ACT team. Overall

patient improvement was measured based on decreases in psychiatric ED visits, psychiatric
Inpatient hospitalizations and total encounters (ED visits + inpatient admissions) in the first 6
months of ACT care as compared to the 6 months prior to admission to the ACT program.
RESULTS
1. OVERALL: High utilization group at baseline (defined as those with >2 total encounters [ED
+ inpatient] in 6 months prior to ACT admission) showed comparable percentage reduction
(35% vs. 34%) in total encounters from 6 months pre- to 6 months post-ACT admission, as
compared with low utilization group The high baseline utilization group showed no significant
difference in failed outreach attempts as compared to low utilization group
2. AOT: For the patient census as a whole, no significant difference was present in utilization
reduction or alliance between AOT and non-AOT.
3. DECANOATE: For the entire patient census, those patients not on decanoate antipsychotics
had significantly greater percentage decrease in total encounters 69% v. 43%
4. SUBSTANCE ABUSE: For the entire patient census taken together, substance abusers
show a strong trend towards more failed outreaches.
CONCLUSIONS
Our results suggest that ACT is beneficial for severely and persistently mentally ill patients
independent of severity of illness. It is unclear why patients who are not on depot antipsychotics
appear to demonstrate greater improvement than those on decanoate while in Assertive
Community Treatment. Possible explanations for this include ACT's emphasis on alliance
development. Though not necessarily more likely to be rehospitalized, substance abusers
are more likely to miss scheduled visits and thus seemed to have poorer alliance; this was the
solitary factor that seemed to have an impact on alliance.

**NO. 168**

**MENTAL HEALTH INTERVENTIONS AMONGST UNIVERSITY STUDENTS: TO REACH WHERE PROBLEMS ARISE**

*Lead Author: Amresh K. Shrivastava, M.D.*
*Co-Author(s): Rahel Eynan. Ph.D., LaKshaman Dutt. MD, Shubhangi Parkar, MD. Ph.D., TSS Rao. MD, DP. Giridhar Ph.D., Rakesh Bhandari, MD., Paul Links, MD, FRCPC*

**SUMMARY:**

Background
Mental health is a key component in capacity-building for young and promising students. There is high prevalence of psychiatric morbidity amongst the student in societies that are undergoing social and economic transition, such as the Indian society. We present the findings of our study which examined levels of psychological distress and examined opinion and awareness about suicide prevention amongst teachers.
Methods
The study used a two-phase, sequential mixed-method approach of converging quantitative and qualitative methodologies. In the quantitative study the 12-item General Health Questionnaire (GHQ-12) was used to measure psychological wellbeing . The qualitative study consisted of a focus group with faculty members.
The 12-item General Health Questionnaire (GHQ-12) was used to measure psychological wellbeing. The General Health Questionnaire (GHQ) is used as a measure of current wellbeing and since its development and it has been extensively used in different settings and different cultures. Thereafter a focussed group workshop was conducted with Teacher
Results
The scores for the sample ranged between 0- 33 with a mean score of 10.25 (SD 6.14). The majority of respondents (70.6%) endorsed low levels of psychological distress (i.e. scores ≤ 12). nearly 12% reported increased current psychological distress (score 16-20). A small proportion of respondents (6.4%) reported currently experiencing severe psychological distress. The overwhelming majority of teachers recognized the importance of mental health; however they were unclear and had no knowledge about how to address mental illness and stress related issues. Lack of awareness, negative attitude and stigma were identified as significant barriers to help-seeking.
Conclusions: The findings from the present study indicated that nearly 18% of the respondents showed an indication of increased risk for mental health problems such as depression. These findings also support the need for the development of a curriculum addressing mental health issues and offers intervention skill training for faculty members Further teachers feel they are able to identify, but unable to offer any intervention

**NO. 169**

**HUMANISTIC AND ECONOMIC IMPACT OF PROVIDING CARE FOR A PERSON WITH SCHIZOPHRENIA: RESULTS FROM THE 2012 NATIONAL HEALTH AND WELLNESS SURVEY**

*Lead Author: Csilla Csoboth, M.D., Ph.D.*
*Co-Author(s): Kathleen F. Villa, M.S., Edward A. Witt, Ph.D., Dave Pomerantz, Cedric O'Gorman, M.D.*

**SUMMARY:**

Background:
When considering the impact of illness for schizophrenia (SCZ), it is important to evaluate the impact on family caregivers and the potential effect on health and productivity.
Purpose:
To examine the impact that SCZ has on individuals who provide care for people with this condition. Specifically, how does caring for a person with SCZ affect a person's health status, work productivity, and healthcare resource utilization?
Methods:
Data for this study were drawn from the 2012 National Health and Wellness Survey (NHWS; N=71,149). The NHWS is an annual, representative cross sectional patient report survey of U.S. adults. This study focused on NHWS participants who provide care for an individual with SCZ (n=147). Two separate comparison groups were drawn from those who act as caregivers for someone with a medical condition other than SCZ (n=3,066) and the remainder of participants who were not caregivers (n=67,936). Because this study was not experimental and the focal group of SCZ caregivers was small, a 2:1 propensity score match was used to create caregiver control group (CGC; n=294;

drawn from all non-schizophrenia caregivers) and a non-caregiver control group (NCGC; n=294; drawn from the remaining non-caregiver participants). This analysis matched participants on the following variables: age, gender, race/ethnicity, marital status, education, income, BMI, smoking, alcohol, pregnancy, exercise, and comorbidities.
Results:
SCZ caregivers had lower mental component summary scores (assessed by the SF-36; M = 43.70) than both the CGC (M = 45.30; ns) and NCGC (M = 47.54; p=0.001) groups. The pattern also held for physical component summary scores (MSCZ = 45.71; MCGC = 47.03, ns; MNCGC = 48.91, p=0.003) and Health Utilities (MSCZ = .65; MCGC = .67, ns; MNCGC = .71, p<0.001). Furthermore, SCZ caregivers reported higher levels of work productivity loss than both comparison groups (for absenteeism, presenteeism, productivity loss, and activity impairment). Post-hoc tests revealed that these differences were significant between the SCZ caregiver group and NCGC group. Finally, SCZ caregivers had more visits to their primary care physician in the past 6 months (M = 6.59) than the CGC (M = 4.90; p=0.023) and NCGC (M = 3.84; p<0.001) groups.
Discussion:
The results of this study suggest that caregivers of people with SCZ are also impacted by the disorder such that SCZ caregivers have lower health status, reduced work productivity, and more healthcare resource utilization than non-caregivers. SCZ caregivers consistently had worse estimated outcomes than caregiver controls, but these differences were modest and not statistically significant. This pattern suggests that the effect of caring for an individual with SCZ may be higher than the effect of providing care for patients with other conditions, but this effect may be small, and future work is needed.

**NO. 170**

**TREATMENT AND DISEASE OUTCOMES AMONG US VETERANS TREATED WITH SELEGILINE TRANSDERMAL SYSTEM**

*Lead Author: Scott DuVall, Ph.D.*
*Co-Author(s): Kimberly B. Portland, PhD, Terry Painter, BS, Andrew Wilson, MSTAT, PhDc, Stephen Agbor, Aaron W.C. Kamauu, MD, MPH, MS*

**SUMMARY:**
Introduction
Depression is a substantial problem and first-line therapies are not always effective for patients. Monoamine oxidase inhibitors (MAOIs) can be useful for patients who have atypical depression or who do not respond to first-line treatments. However, MAOIs are infrequently prescribed due to adverse issues with food interactions requiring dietary restrictions. A relatively new transdermal delivery mechanism for the MAOI selegiline, approved by the FDA in 2006, significantly reduces the need for such restrictions. This study examines treatment patterns and disease outcomes among US Veterans treated with selegiline transdermal system (STS).
Methods
This retrospective descriptive study used electronic medical record data from the Department of Veterans Affairs (VA) between January 1999 and July 2012. Patients were included based on at least one prescription for STS and 180 days baseline healthcare coverage in VA prior to initial prescription date. 719 patients met these criteria. For STS-treated patients with a diagnosis of major depressive disorder (MDD), antidepressant treatment patterns were explored. In addition, incidence rates (IRs) were calculated for relevant outcomes most likely to be linked to either the condition (depression) or treatment (STS). Changes in weight and BMI were explored in the 12 months before and after the index date (first medication record for STS).
Results
78% of VA patients prescribed STS were age 45 years old or over, 83% were male, and 75% were white. 77% were overweight or obese.
Among patients with MDD, less than 5% had STS as their initial antidepressant and 86% switched to STS from one or more other antidepressants, with the majority of patients switching medications within 90 days of initial antidepressant prescription. Close to 25% of patients had STS as the final antidepressant prescribed, while other patients switched again to different antidepressants.
IRs for relevant outcomes were psychiatric inpatient admissions (IR 0.109), inpatient admissions for essential hypertension and hypertensive crisis (IR 0.005), and all cardiovascular events (IR 0.024). Overall, no statistically significant weight changes were observed between the 12-month pre-index date and index date, nor between the index date and the 12-month post-index date. However, a general pattern of weight loss pre-index followed by weight gain post-index was observed, with the largest weight changes observed among underweight patients (starting BMI < 18).
Conclusions
STS was prescribed to patients in the context of complex, highly-personalized care. Although fewer than 5% of patients receiving STS had it as their initial antidepressant, almost 25% had STS as the final antidepressant prescribed, possibly indicating positive patient response. Results related to disease outcomes support current research on STS. Further study, especially on long-term use, is recommended.

**NO. 171**

**LURASIDONE FOR THE TREATMENT OF BIPOLAR DEPRESSION: CURRENT STATE OF THE EVIDENCE**

*Lead Author: Edward Schweizer, M.D.*
*Co-Author(s): Josephine Cucchiaro, PhD, Hans Kroger, PhD, Antony Loebel, MD, Andrei Pikalov, MD, PhD*

**SUMMARY:**
Background: Evidence-based treatment options remain limited for the management of bipolar I depression. Lurasidone is an atypical antipsychotic that has recently been approved, both as adjunctive therapy and monotherapy for the treatment of bipolar depression. We summarize here key aspects of the lurasidone bipolar development program.
Methods: The efficacy and safety of lurasidone was evaluated for the treatment of patients with major depressive episodes associated with bipolar depression, based on results from 3 randomized, double-blind, placebo-controlled, 6-week trials (691 randomized to lurasidone; 502 to placebo). In a 6-week monotherapy trial, patients were assigned to one of two fixed-flexible dose ranges of lurasidone (20-60 mg/d or 80-120 mg/d); in the two 6-week adjunctive trials, patients received flexible doses of lurasidone (20-120 mg/d) or placebo, adjunctive to lithium or valproate. Patients (N=813) completing the three 6-week trials continued in a 6 month open-label exten-

sion study.
Results: In the monotherapy study, treatment with lurasidone, in both daily dose ranges, was associated with significantly greater improvement in the Montgomery Asberg Depression Rating Scale (MADRS; primary outcome) starting at week 2 through the week 6 endpoint. Significantly greater efficacy was also observed on secondary efficacy measures, including CGI-BP depression severity, MADRS-6 (core items), HAM-A, and patient-rated measures of quality of life and functioning. In the first 6-week adjunctive therapy trial, treatment with lurasidone was associated with significantly greater improvement in the MADRS at week 3 through the week 6 study endpoint. Significantly greater efficacy was also observed on secondary efficacy measures, including the CGI-BP depression severity, and patient-rated measures of quality of life and functioning. In the second 6-week adjunctive trial, treatment with lurasidone was associated with significantly greater improvement in the MADRS starting at week 2 and continuing through week 5; significance was not maintained at week 6. In this study, significant improvement at endpoint was observed on the HAM-A, and on patient-rated measures of depression and quality of life. The most frequently reported adverse events in the three short-term studies were nausea, somnolence and akathisia. Low rates of weight gain and few effects on lipid and glucose parameters were observed. Treatment with lurasidone for 6 months was safe and well-tolerated with minimal effect on weight and metabolic parameters. Sustained improvement in depressive symptoms was observed.
Conclusions: Lurasidone, both as monotherapy and as adjunctive therapy with lithium or valproate, appears to be an effective treatment for bipolar I depression with a favorable benefit-risk profile in short and longer-term treatment.

**NO. 172**

**ITI-007 FOR THE TREATMENT OF SCHIZOPHRENIA: A RANDOMIZED, DOUBLE-BLIND, PLACEBO- AND ACTIVE-CONTROLLED PHASE 2 TRIAL**

*Lead Author: Kimberly E. Vanover, Ph.D.*
*Co-Author(s): Robert E. Davis, Sharon Mates*

**SUMMARY:**

Background: ITI-007 is an investigational new drug in development for the treatment of schizophrenia and other neuropsychiatric indications. ITI-007 modulates serotonergic, dopaminergic and glutamatergic neurotransmission. ITI-007 is a potent 5-HT2A receptor antagonist, a dopamine phosophoprotein modulator (DPPM) with activity as a pre-synaptic partial agonist and post-synaptic antagonist at dopamine D2 receptors, a glutamatergic modulator and a serotonin reuptake inhibitor. ITI-007's pharmacological profile is predicted to translate clinically to broad antipsychotic efficacy against positive and negative symptoms and to reduce depression. ITI-007 was evaluated in a randomized, double-blind, placebo- and active-controlled Phase 2 clinical trial designed to evaluate the efficacy and safety of ITI-007 in patients with acute schizophrenia.
Methods: Patients with an acutely exacerbated episode of schizophrenia were randomized to receive one 60 mg ITI-007, 120 mg ITI-007, 4 mg risperidone or placebo in a 1:1:1:1 ratio. Patients received study treatment orally once daily in the morning for 28 days. Patients were allowed in the study if they experienced co-morbid symptoms of depression, if the depression was secondary to schizophrenia. The primary endpoint was change from baseline on the total Positive and Negative Syndrome Scale (PANSS) on study Day 28. Secondary endpoints included the Negative Symptom Subscale of the PANSS, the Calgary Depression Scale for Schizophrenia (CDSS), and the Clinical Global Impression Scale for Severity (CGI-S). Safety and tolerability were assessed.
Results: ITI-007 at a dose of 60 mg improved schizophrenia as measured by change from baseline on the total PANSS score on Day 28, compared to placebo ($p = 0.017$) and significantly improved CGI-S. The higher dose, 120 mg ITI-007, did not significantly separate from placebo on the total PANSS at Day 28. ITI-007 (60 mg) was safe and well tolerated. In contrast to risperidone, ITI-007 was not associated with increased motor disturbance, hyperprolactinemia, or weight gain associated with metabolic disturbances. ITI-007 (60 mg) demonstrated a differentiated response profile compared to risperidone in that ITI-007, but not risperidone, improved negative symptoms in a subgroup of patients with prominent negative symptoms at baseline and significantly reduced depression in a subgroup of patients with depression.
Discussion: ITI-007 demonstrated antipsychotic efficacy in patients with acute schizophrenia with a differentiating response profile consistent with improved social function including improved negative symptoms in patients with prominent negative symptoms at baseline and significantly improved depression in patients with depression at baseline. Robust and clinically meaningful efficacy was observed at a moderate dose of ITI-007, 60 mg, which was safe and well tolerated. ITI-007 represents a new approach to the treatment of schizophrenia and affective disorders.

**NO. 173**

**A RETROSPECTIVE REVIEW ANALYZING COSTS AND OUTCOMES ASSOCIATED WITH SWITCHING TO LONG-ACTING DEPOT INJECTIONS AT URBAN COMMUNITY MENTAL HEALTH CENTERS**

*Lead Author: Ramachandra P. Reddy, B.S.*
*Co-Author(s): Terrance J. Bellnier, MPA., Kashinath Patil, MD., Vadryn Pierre, B.S., Gregory Seeger, M.D.*

**SUMMARY:**

Introduction: This study was IRB-approved and compares the cost-effectiveness and clinical outcomes between the choice of long-acting injectables (LAIs) and oral antipsychotics.
Methods: This was a retrospective review that analyzed charts at Rochester Mental Health Center (RMHC) and Genesee Mental Health Center (GMHC). Trained raters documented service utilization through inpatient hospital stays, ER visits, outpatient visits, and type of LAI used. Clinical outcomes were measured by a quarterly GAF scale and CGI-I scores to determine changes in disease status between six months prior to LAI exposure and six months post LAI exposure. All 109 subjects were comprehensively assessed through progress notes and hospitalization records to determine an accurate GAF and CGI-I score but only 47 subjects could be match-paired.
Results: 109 patients (Average age = 45.81 +/- 12.55) with 64 being male were documented. Hospitalization, emergency visits and total yearly psychiatric care costs significantly decreased after switching to LAI ($P<.001$). Pre-LAI hospitalization was higher in the typical group ($P<.001$) but total yearly health

care costs after starting an LAI did not differ (p=.17) between the typical (n=44) and atypical group (n=65). Matched patients improved overall from baseline to the post-exposure period in GAF (p=.009) and CGI-I scores (p<.001). The class of LAI used had no effect on clinical outcome measures (p=.17). There were no demographic differences between the classes.
Conclusions: Due to limitations, these results may not be applicable to the general population. The present study provides evidence that LAIs stabilize or improve outcome measures while reducing hospitalization and overall costs. Atypical and typical LAIs should be used as first line agents and prophylactically rather than as a last resort. Ultimately, the decision to use an atypical or typical LAI should be driven solely by potential side-effects and likelihood of adherence to therapy.

**NO. 174**

**A QUANTIFICATION OF AGENTIC AND COMMUNAL VALUES IN ADOLESCENTS' LIFE NARRATIVES**

*Lead Author: Danilo Garcia*
*Co-Author(s): Henrik Anckarsäter, M.D., Oscar N. E. Kjell, Patricia Rosenberg, C. Robert Cloninger, M.D., Trevor Archer, Ph.D., Sverker Sikström, Ph.D.*

**SUMMARY:**

Background
Life stories emphasize the narrative and self-organizing aspects of human behaviors and complement personality traits in explaining human identity. In contrast to most research on narratives in which the analysis is restricted to the researcher's subjective evaluations and interpretations, we used computational methods to quantitatively investigate the relationship between personality and narratives events. Meta-cognitive strategies and principles that guide agentic (self-directedness; e.g., being autonomous, responsible and having self-control), communal (cooperativeness; e.g., showing empathy, helping behavior, and social tolerance), and transcendental (self-transcendence; e.g., the sense of being part of the whole universe) behavior were of special interest. We also investigated which pronouns were most common in relation to personality constructs that were significantly related to the narratives.
Method
Personality was assessed among 79 adolescents at one point in time using the NEO Personality Inventory – Revised (NEO-PI-R) and the Temperament and Character Inventory (TCI). Six months later, adolescents were asked to write down the most positive or the most negative event that had happened to them in the last three months. Adolescents were explicitly instructed to answer the following questions within their narratives: What happened? Who were involved? Why do you think it happened? How did you feel when it happened? How do you think the involved persons felt? The descriptions were quantified using semantic spaces, a computational method in which the Latent Semantic Analysis algorithm generates a semantic representation of the narratives. This representation was used to study whether it predicted the personality measures.
Results
Only Self-directedness and Cooperativeness were predicted by the semantic representation of the narratives. High levels of Self-directedness and Cooperativeness were associated with plural pronouns (e.g., us), whereas low levels were associated with singular pronouns (e.g., one-self, mine).
Conclusions
Agentic and communal values are involved when adolescents describe positive and negative life experiences.

**NO. 175**

**HEALTHCARE PROVIDER BURNOUT IN A U.S. MILITARY MEDICAL CENTER**

*Lead Author: Heather K. Mak, M.D.*
*Co-Author(s): Jeffrey Millegan, M.D*

**SUMMARY:**

Introduction:
Provider burnout can lead to decreased efficiency, empathy and increased medical errors. Our study examines levels of burnout and factors contributing to burnout in a military medical center during a period of war.
Methods:
A survey including the Maslach Burnout Inventory (MBI), deployment history, demographic, other work-specific variables and source of greatest frustration at work was distributed to healthcare providers at Naval Medical Center San Diego. MBI means were calculated for each subscale, emotional exhaustion (EE), depersonalization (DEP) and personal achievement (PA) and statistically significant associations of the various collected variables were analyzed. Source of greatest frustration was compared between those with high and low scores in the various MBI subscales.
Results:
523 (52.3%) surveys were collected. 61.3% of respondents were active duty and 34.2% had a previous military deployment. MBI means for each subscale were 19.99 (EE), 4.84 (DEP), 40.56, comparable with normative civilian samples for healthcare providers. Among active duty providers, a history of deployment had no effect on burnout scores. Frustration over administrative support was associated with high EE and DEP. Frustration over life/work balance was associated with high EE.
Conclusions:
Levels of healthcare provider burnout in a military medical center were similar to civilian counterparts. Deployment had no effect on levels of burnout. Sources of frustration linked to higher burnout were perceived administrative support and challenges with life/work balance.

**NO. 176**

**ASSESSING READINESS TO CHANGE IN OBESE ADULTS WITH SEVERE MENTAL ILLNESS**

*Lead Author: Melinda McCusker, N.P.*

**SUMMARY:**

Introduction: Two thirds of adults in the United States are considered at least overweight and approximately 35% are obese. Individuals with severe mental illness (SMI) are eight times more likely to be obese than the general population. Obesity contributes to medical complications such as coronary artery disease, hypertension, and diabetes mellitus. Annually, obesity-related disease management cost approximately $100 billion and $117 billion is spent on weight reduction treatment. Motivation is an important factor to consider for compliance when enrolling participants into a weight reduction program. A weakness of previous approaches has been the lack of assessing readiness to change. The goal of this study is to develop an

educational intervention aimed at increasing the readiness to change utilizing the stages of change and decisional balance components of the Transtheoretical Model (TTM) for a prerequisite to a weight reduction program for adults with SMI.
Methods: As there is a dearth of literature exploring SMI and TTM in the context of weight management, two systematic reviews were conducted: TTM and weight as well as TTM and SMI utilizing ten health-related databases.
Discussion: The TTM can provide specific intervention strategies tailored to the needs of the participants for each stage of change. Use of the decisional balance component was associated with weight loss outcomes. Though cognitive impairment in individuals with SMI fluctuate, alternative teaching methods are effective. Use of a group setting is beneficial as it addressed the barriers of a lack of support system.
Conclusion: The use of a TTM intervention as a prerequisite to a weight reduction program has the potential to reduce attrition rate and increase the number of appropriate referrals and availability to a comprehensive weight reduction program.

**NO. 177**

**TOPIRAMATE USE DURING PREGNANCY: PREGNANCY AND NEONATAL OUTCOMES**

*Lead Author: Ruby C. Castilla, D.P.H., M.B.A., M.D.*
*Co-Author(s): Lisa Ford, M.D., Lewis Manera, M.P.H, Steve Ascher, PhD, Robert Kwarta, PharmD*

**SUMMARY:**
Objectives: To evaluate fetal or neonatal outcomes (with a focus on major congenital anomalies) with use of topiramate monotherapy and to examine whether differences occurred in the reporting and patterns of these outcomes for pregnant women with and without epilepsy.
Methods: Spontaneous, postmarketing reports involving women who used topiramate monotherapy during pregnancy from 18 July 1995 (International Birth Date of topiramate) through 30 April 2011 were retrieved from the Global Medical Safety database. All formulations for topiramate, used as monotherapy, were selected for the analysis. Monotherapy was defined as any situation where no other AED was listed in the pregnancy case report, either as a suspect or concomitant medication, regardless of indication. Results were summarized descriptively.
Results: A total of 1,163 cases of women who used topiramate monotherapy during pregnancy (for any indication) were retrieved from the Global Medical Safety database. Since some women used topiramate for more than one indication, there were a total of 1,199 reported indications for topiramate monotherapy, which were primarily for treatment of epilepsy (n=599), accounting for half of the indications, and migraine prophylaxis (n=240, 20.0%). Out of 1163 cases, pregnancy outcome was reported in 50.6% (n=589). Live birth was the most frequently reported outcome, regardless of indication (epilepsy, 78.8% [312/396]; prophylaxis of migraine, 59. 3% [48/81]; other indication, 64.4% [85/132]).
Cleft lip or palate anomalies (epilepsy, n=15; migraine, n=2; other indication, n=4; and indication not reported, n=2), limb, hand, or other skeletal anomalies (epilepsy, n=13; migraine, n=2; other indication, n=0; and indication not reported, n=1), and respiratory or cardiovascular anomalies (epilepsy, n=12; migraine, n=1; other indication, n=1; and indication not reported, n=2) were the most often reported major fetal or neonatal anomalies. More reported major fetal or neonatal anomalies occurred in patients being treated for epilepsy (53/79 anomaly-indication pairs) compared with patients being treated for migraine prophylaxis (10/79 anomaly-indication pairs).
Conclusion: Although incidence rates cannot be calculated based on spontaneous adverse event reporting, this summary of reported pregnancy and neonatal outcomes with use of topiramate monotherapy suggests that the risk for major fetal or neonatal anomalies may differ based on the indication for topiramate

**NO. 178**

**IMPACT OF COMORBID DEPRESSION AND ANXIETY ON FUNCTIONALITY: A STUDY OF POSTPARTUM DEPRESSED WOMEN TREATED WITH DESVENLAFAXINE**

*Lead Author: Shaila Misri, M.D.*
*Co-Author(s): Jasmin Abizadeh, B.A., Andrea B. Eng, B.Sc., Deirdre Ryan, M.D.*

**SUMMARY:**
Objective: This prospective, open-label study examined the impact of change in depression and anxiety symptoms on functional outcomes in the treatment of postpartum depression with Desvenlafaxine.
Methods: In this study where women are being recruited presently, 30 women were screened; eleven non-nursing, postpartum participants enrolled and completed a 12 week study. They met the DSM V criteria for Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD). Bi-weekly assessments of mood, anxiety, and quality of life were completed. Questionnaires included: the Montgomery-Asberg Depression Rating Scale (MADRS), Hamilton Anxiety Rating Scale (HAM-A), Penn State Worry Questionnaire (PSWQ), and Sheehan Disability Scale (SDS). The dose ranged from 50mg-100mg/day of Desvenlafaxine.
Results: Our results specifically focus on MDD, anxiety related to depression as well as comorbid GAD. At study entry, participants were severely depressed, moderately anxious, and markedly impaired in their functioning. By week twelve, 91.0% reached remission of depressive symptoms (MADRS, p=.0001) and 81.8% reached remission of anxiety symptoms (HAM-A, p=.0001). Thirty-six percent of women had a comorbid anxiety disorder, all of whom had a diagnosis of GAD. Based on the PSWQ, worry scores significantly decreased (p=0.001) for 64% of participants, reaching scores consistent with those of non-anxious groups. Those with symptoms of GAD had symptom decline over the course of 12 weeks, but not everyone experienced complete remission. Functionality was markedly impaired upon study entry; however, by week twelve, 17.5% of participants were moderately impaired, while 63.6% were only mildly impaired (p=.001) in both their social life and family/home responsibilities. The average dose of response was 100 mg/day of Desvenlafaxine.
Conclusion: Most participants reached remission of MDD and anxiety symptoms on 100mg of Desvenlafaxine; functionality improved in the majority of patients. While a significant percentage of GAD patients reached remission, those with severe clinical manifestations of GAD at baseline displayed residual symptoms at the end of the study. Consequently, the majority of them continued to show mild impairments in functionality.

**NO. 179**

**CHILDHOOD TRAUMATIC EXPERIENCES IN WOMEN WITH HISTORY OF PREINATAL DEPRESSION**

*Lead Author: Armagan Ozdemir, M.D.*
*Co-Author(s): Sevilay Kantekin Akcan, M.D., Nesrin Tomruk, M.D., Cana Aksoy Poyraz, M.D., Evrim Erten, M.D., Nihat Alpay, M.D.*

**SUMMARY:**

OBJECTIVE: In this study, we aimed to investigate the relationship between childhood trauma history and perinatal depression. We also aimed to draw attention to the importance of comorbid psychiatric disorders in the development and management of perinatal depression. Detailed evaluation of risk factors in the etiology of perinatal depression would reveal underlying comorbid diseases and therefore increase the effectiveness of the management of these patients.

METHOD: A total of 133 women were enrolled into our study. Forty women diagnosed with perinatal depression and fifty women with the diagnosis of major depression, who admitted to psychiatric clinics in Bakırköy Prof. Dr. Mazhar Osman Mental Health and Neurological Diseases Training and Research Hospital, were consecutively included. As a healthy control group, forty-three voluntary women were recruited to the study. Sociodemographic data form, Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, and Childhood Trauma Questionnaire were applied to all participants with face-to-face interview.

RESULTS: The prevalence rates of childhood trauma history in perinatal depression group were as follows: 95% physical neglect, 62.5% emotional abuse, 60% emotional neglect, 45% physical abuse, and 35% sexual abuse. The rates of emotional abuse, emotional neglect and total score of Childhood Trauma Questionnaire were significantly higher in women with perinatal depression compared to major depression group. The patients with perinatal depression had less weight gain during pregnancy, shorter breastfeeding times, more difficulty in taking care of their babies, greater number of curettages and abortions. Previous perinatal depression and family history of perinatal depression were also more common in perinatal depression cases. In addition, there were significant correlations in terms of sexual dysfunction, history of premenstrual syndrome, marital satisfaction, poor communication with partner and unplanned pregnancy in subjects with history of perinatal depression and major depression; however, there was no difference between the groups.

CONCLUSIONS: We found that history of perinatal depression was significantly associated with childhood trauma history. Routine screening for trauma exposure and depression during pregnancy may help to detect and treat depression early. However, prospective studies with larger sample size are needed to better investigate the effects of childhood trauma in perinatal depression and to reveal mechanisms that may trigger depressive episodes in trauma-exposed women, who may be vulnerable to depressive episodes during pregnancy.

**NO. 180**

**SOMATIC ANXIETY AND COMORBID ANXIETY DISORDERS IN POSTPARTUM WOMEN WITH BIPOLAR II DISORDER**

*Lead Author: Deirdre Ryan, M.B.*
*Co-Author(s): Jasmin Abizadeh, B.A., Andrea B. Eng, B.Sc., Shaila Misri, M.D.*

**SUMMARY:**

Background: Symptoms of anxiety often accompany a diagnosis of Bipolar II Disorder (BD II), either as symptoms inherent to the bipolar profile or due to a comorbid anxiety disorder. These symptoms add to the complexity of the presenting picture and need to be managed skillfully for successful treatment outcome and return to full functionality.

Methods: Fifteen postpartum, non-lactating women completed a 14 week study assessing the effectiveness of Quetiapine XR in treating BD II and the impact on functionality. Medication was started at 50 mg and titrated up to 300 mg daily. Rating scales assessed diagnostic criteria, mood, anxiety, illness severity, and functionality with: Mini International Neuropsychiatric Interview (MINI), Hamilton Depression Rating Scale (HAM-D), Clinical Global Impression Severity Scale (CGI-S), and Quality of Life Enjoyment Satisfaction Questionnaire (Q-LES-Q). The Wilcoxon signed rank test analyzed changes in scores.

Results: These findings report on results specifically with regards to anxiety symptoms for this study. Altogether, 35.7% of participants were diagnosed with comorbid Generalized Anxiety Disorder, 38.5% with Panic Disorder, and 15% with Obsessive Compulsive Disorder. Mean score on HAM-D item 12 assessing psychic anxiety at baseline was 2.29 (0.6241), which indicated worrying about minor matters; this decreased to 0.7273 (0.6467) by week 12, indicating slight subjective tension and irritability. This was statistically significant (Wilcoxon signed rank test: V=66, p=0.0031). Mean score on HAM-D item 13 assessing somatic anxiety at baseline was 2.0833 (0.6539), indicating moderate severity; this decreased to a mean of 0.5455 (0.5222) by week 12, indicating absent or mild anxiety. This was also statistically significant (Wilcoxon signed rank test: V=66, p=0.0033). At entry, the initial mean CGI-S score of women was 4.2272 (0.4289), indicating marked-to-moderate symptom severity. By week fourteen, 86.7% met the criteria for no illness, with a mean of 1.2308 (0.832), which was a statistically significant change from baseline (p=0.001). At week 2, mean overall Q-LES-Q score was 2.42(0.69); by week 12, mean overall Q-LES-Q score was 4.00(0.91), indicating a significant return to full functionality (p=0.001). The mean daily dose of remission was 137.5 mg.

Conclusion: Participants in our study showed a significant decrease on somatic and psychic anxiety symptoms, as well as improvements in functionality and severity of symptoms. This provides support that Quetiapine XR may have an anxiolytic effect in addition to its antidepressant properties. It seems beneficial to choose a pharmacological agent that addresses both the mood and anxiety component of the illness, due to the high comorbidity between BD II and anxiety found in clinical samples.

**NO. 181**

**VENLAFAXINE-INDUCED NIGHT SWEATS: A CASE REPORT AND LITERATURE SEARCH FOR REMEDIES**

*Lead Author: Amer Ibrahim, M.D.*

**SUMMARY:**

Venlafaxine was introduced in 1994 and is the first Serotonin

Norepinephrine Re-uptake Inhibitor (SNRI). It is FDA approved for treatment of Depression, Generalized Anxiety disorder (GAD), Social anxiety disorder and Panic disorder.
We report a 28 years old otherwise healthy Caucasian female with GAD & Panic Disorder who failed multiple trials with various SSRI's (Selective Serotonin Re-uptake inhibitors). She eventually had a dramatic sustainable improvement with Venlafaxine XR.
Unfortunately, she suffered from persistent night sweats that completely disappeared upon discontinuation of Venlafaxine. Due to this dramatic improvement, patient decided to restart Venlafaxine. In addition to the case report, we describe here remedies on how to deal with this side effect. This may even include use of Terazosin.

**NO. 182**

**INHALED LOXAPINE AND LORAZEPAM IN HEALTHY VOLUNTEERS: RESULTS OF A RANDOMIZED, PLACEBO-CONTROLLED DRUG-DRUG INTERACTION STUDY**

*Lead Author: Daniel Spyker, M.D., Ph.D.*
*Co-Author(s): James V Cassella, Ph.D., Randall R. Stoltz, M.D.,Paul P. Yeung, M.D., M.P.H.*

**SUMMARY:**
OBJECTIVE: To compare the safety and pharmacodynamic effects of single-dose inhaled loxapine and intramuscular (IM) lorazepam compared with each agent administered alone (NCT01877642).
BACKGROUND: Inhaled loxapine administered via the Staccato® system is an effective treatment for agitation in patients with schizophrenia or bipolar I disorder. Lorazepam is a commonly used treatment for agitation that is often concomitantly administered with other treatments, but a lorazepam interaction with inhaled loxapine has not been previously studied.
DESIGN/METHODS: This randomized, double-blind, cross-over study was conducted in healthy, non-obese volunteers (aged 18-50y). Primary endpoints were the maximum effect (i.e. minimum value) and area under the curve (AUC) from baseline to 2hr post-treatment value in respirations per minute and pulse oximetry between treatment groups: concomitant inhaled loxapine 10mg+IM lorazepam 1mg (Treatment A) vs. inhaled loxapine 10mg+IM placebo (Treatment B), or vs. IM lorazepam 1mg + Staccato® placebo (Treatment C). LS-mean [90% CI] for ratio of Treatment A vs. either Treatment B or Treatment C were derived. Equivalence was confirmed if the 90% CI of the ratios fell within 0.8-1.25 range. All subjects were exposed to Treatments A-C in random order, with 3-day washout between treatments. Other pharmacodynamic safety measures included effects on blood pressure (BP), heart rate, and sedation (100mm visual analog scale). Adverse events (AEs) were also recorded.
RESULTS: All 18 enrolled subjects (mean 20.4y; 61% male) completed the study. No significant interaction was seen with inhaled loxapine +IM lorazepam (Treatment A) on respiration or pulse oximetery vs. either agent alone (vs. Treatment B or C) throughout the 12hr post-dose period, as 95% CI of ratios of AUC and Cmin fell within 0.80-1.25 range supporting equivalence. BP and heart rate were also unchanged throughout 12hr post-dose period with inhaled loxapine+IM lorazepam vs. either agent alone. VAS sedation was significantly lower 2hr post-dose with inhaled loxapine+IM lorazepam vs. IM lorazepam alone. However, coadministered inhaled loxapine+IM lorazepam was equivalent for sedation vs. inhaled loxapine alone throughout 12hr post dose period. There were no deaths, serious AEs, or premature discontinuations due to AEs. No treatment-emergent AEs considered related to study drug were reported.
CONCLUSIONS: In this population of healthy volunteers, no effects on respiration pharmacodynamics or vital signs were seen when inhaled loxapine was administered in combination with IM lorazepam compared with each drug taken alone. Effects on sedation were expected with each drug and the combination did not result in any significant change in sedation vs. inhaled loxapine alone.
Funding: This study was funded by Alexza Pharmaceuticals. Medical writing support was provided by Karen Burrows, MPhil, of Excel Scientific Solutions and funded by Teva Pharmaceuticals.

**NO. 184**

**EXPLORING INTER-RELATIONSHIPS OF PATHOLOGICAL GAMBLING, SMOKING CRAVING AND PSYCHOPATHOLOGY IN METHADONE-MAINTAINED OPIATE DEPENDENCE**

*Lead Author: Simon Chiu, M.D., Ph.D.*
*Co-Author(s): Simon Chiu MD PhD ABPN, Gamal Sadek MBChB FRCP (C ), Zack Cernovsky PhD cert. Psychol. (C),Gupreet Sidhu MBBS MRC FRCP (C); John Copen MD FRCP(C), Mariwan Husni MD FRCP (C), Andrew Sidhu B.Sc.*

**SUMMARY:**
Introduction: Recent interest directed towards the issue of Substance Abuse co-morbidity in Pathological Gambling. There is a paucity of data to examine whether gambling craving correlates with smoking urges in the cohort of opiate dependence maintained on methadone treatment (MMT).
Objective of study : to examine the pattern of gambling behavior and gambling urge in a cohort of opiate dependent subjects maintained on methadone [MMT] in the community in Southwest Ontario
Method: Our study design was cross-sectional. In the methadone clinic, we administered the battery of standardized questionnaires :SOGS (South Oaks Gambling Screen), DAST (Drug Abuse Screening Test), AUDIT (Alcohol Use Disorder Identification Test), SCL-90 (Symptom Check List-90 ) Fagerstrom Test for Nicotine Dependence (FTND), and Gambling and Smoking Urge Scale, to the sample of [Med-OD] subjects (n =50) attending the certified methadone clinic. We monitored methadone treatment and non-opiate substance use with use of NIDA-approved standardized urine tests.
Results : In our sample of MMT opiate dependent subjects [mean age 34.7 yrs ( male/female : 22/ 28]. we found the prevalence of the pathological gambling defined by SOGS score > = 5 to be 18%. Casinos and lottery tickets were the commonest forms of gambling. Nicotine dependence was statistically higher in pathological gamblers compared with non-pathological gamblers : 77.8 % vs 48%. The subjects reporting problem gambling were more likely to report involvement in smoking, alcohol and drug abuse and exhibited more severe psychopathology on the anxiety and depressive subscales of SCL-90 scale. Smoking urge correlated highly significantly ( $p < 0.009$) with Gambling urge and alcohol craving.
Conclusion: Our results on the robust correlation of smoking urge and gambling urge in opiate dependent subjects highlight opiate receptor-mediated brain reward mechanisms underlying both nicotine dependence and pathological gambling, and