NEW RESEARCH POSTERS

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MEDICAL STUDENT-RESIDENT COMPETITION POSTER 1

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NO. 1

CLINICAL CHARACTERISTIC OF SYNTHETIC CANNABINOID USERS ADMITTED TO THE INPATIENT PSYCHIATRIC SERVICE

Lead Author: Sabina Fink, M.D.
Co-Author(s): Ronak Patel, M.D., Raminder Cheema, M.D., Houssam Raai, M.D., Luisa Gonzalez, M.D., Panagiota Korenis, M.D., Yevgenia Aronova, M.D.

SUMMARY:
Synthetic cannabinoids (SCs) are analogs of natural cannabinoids that are chemically synthesized. These compounds are used frequently in the community as illicit substances. Literature review indicates that its use is increasing due to its easy accessibility despite it being placed under Schedule I of the Synthetic Drug Abuse Prevention Act of 2012. SCs are readily found in most inner urban communities across the United States, and their abuse is increasing at a high rate. Studies suggest that SCs can result in medical and psychiatric manifestations including vomiting, tachycardia, seizures, auditory hallucinations, aggressive behavior and an increase in impulsivity. The increase in prevalence compounded with the potentially devastating psychiatric sequelae raise concerns for mental health practitioners. While some literature exists that reviews the psychiatric manifestations of patients who use SCs, there are no studies that review the clinical characteristics of these types of patients. At this time, SC drug screening is not readily available in most hospital centers, and intoxication with SCs is primarily based on a clinical evaluation, patient's self-report or collateral information. We conducted a retrospective case control study of patients who were admitted to the inpatient psychiatric service for a period of seven months from January 1, 2015 through July 31, 2015 who reported smoking SCs. This poster will attempt to explore specific clinical risk factors of patients who use SCs and will consider clinical implications as well as treatment strategies and multidisciplinary management of such complicated patients. A discussion of the utility of having routine drug screening specific for SCs will also be explored. In addition, we aim to bring to light the need for future investigations to better understand how to manage this difficult patient population.

NO. 2

A UNIQUE CASE OF POST-ELECTROCONVULSIVE THERAPY STATUS EPILEPTICUS

Lead Author: Sameera Guttikonda, M.D.
Co-Author(s): Arielle Kulbersh, M.D., Andrew Truccone, D.O.

SUMMARY:
Background: Electroconvulsive Therapy (ECT) is one of the treatment modalities for disabling psychiatric conditions. Generally, induced seizures are time limited, and seizures occurring postECT (tardive seizures) are relatively infrequent. Even less frequent is a progression of tardive seizures to status epilepticus. We present a clinical case report of a patient who developed tardive status epilepticus. **Methods:** The treatment course of a patient with postECT tardive status epilepticus is presented, and the literature on tardive seizures is reviewed. **Results:** A 39-year-old male patient with a history of schizophrenia and developmental delay presented with symptoms of catatonia. Subsequently, he developed signs and symptoms consistent with Neuroleptic Malignant Syndrome. His condition improved with supportive measures and a high dose of lorazepam. After initial response, the symptoms of catatonia plateaued and did not respond to further management. Given the patient's clinical state and unrelenting catatonia, ECT was recommended. Index bitemporal treatment led to subsequent tardive seizure. The patient developed facial twitching, ocular deviation and oropharyngeal contractions. This episode responded to methohexital. Following this, the patient had two more convulsive episodes that responded spontaneously. The patient required lorazepam for seizure control; however, his clinical condition worsened with five separate seizure episodes in a day that were treated with phenytoin bolus loading, though his levels remained subtherapeutic. Throughout his clinical course, a marginal improvement in catatonia was appreciated with one-time response to Midazolam. However, this response wasn't replicated during a repeat Midazolam trial. **Discussion:** This case highlights relatively complex and serious sequela of tardive seizures. Frequency of prolonged seizures is relatively low (1–2%), and postECT tardive status seizures are even less frequent. There is a paucity of data about this unique clinical complication; our brief literature review revealed only 6 cases (two cases from the same article) of seizures postECT that were labeled as "tardive seizures." **Conclusion:** It is

important to document these challenging clinical scenarios to further our understanding of this relatively infrequent complication. PostECT status epilepticus is not a contraindication to ongoing ECT treatment; however, a subsequent course of ECT should be completed with concomitant use of anti-epileptic medications. This case is highly relevant due its unusual nature, especially as Electroconvulsive Therapy is an oft-recommended and highly effective treatment modality for patients exhibiting catatonia.

NO. 3

COMBINED LOXAPINE AND CYPROHEPTADINE LIMITS CLOZAPINE REBOUND PSYCHOSIS AND MAY ALSO PREDICT CLOZAPINE RESPONSE

Lead Author: Lila Aboueid, D.O.
Co-Author(s): Shama Patel, M.D., Richard H. McCarthy, M.D.

SUMMARY:

Clozapine, the only FDA-approved antipsychotic used in treatment-refractory schizophrenia and suicidality, has consistently been shown to be more effective than any other antipsychotic medication. However, clozapine-induced agranulocytosis limits clozapine's use, and when it occurs, clozapine must be stopped and cannot be restarted. This results not only in the loss of incremental benefits that clozapine afforded but also may lead to particularly severe, difficult to treat rebound psychosis. Cyproheptadine has been shown to limit this rebound. There has been considerable speculation about clozapine's mechanism of action, but it remains unknown. Using PET data, Kapur et al. reasoned that a loxapine and cyproheptadine combination could have a 5HT-2A/D2 ratio, D4 antihistamine and antimuscarinic receptor blockage profile similar to clozapine. Receptor studies by others support this. Cyproheptadine mimics some of clozapine's actions and can increase appetite and impair insulin activity. In addition, neither rats nor pigeons are able to discriminate clozapine from cyproheptadine. Finally, some patients with whom we work who have discontinued clozapine report that cyproheptadine feels like clozapine to them. The patient in this case is a 66-year-old Caucasian female with a long history of treatment-refractory schizophrenia. In spite of multiple antipsychotic medication trials, the patient's paranoid delusions had not abated. Her daily life was increasingly impaired by her delusions, and she was referred for a clozapine trial. Clozapine was titrated to a maximum daily dose of 400mg. The patient had a rapid and significant decrease in her delusions from early in the trial, and these continued to abate with subsequent dose increases. Initially, hypotension limited dose increases, but at ten weeks, she had a precipitous drop in her WBC/ANC that proceeded to full-blown agranulocytosis over a three-day period. Filgrastim treatment was begun; clonazepam was used to contain anxiety, and the patient was started on cyproheptadine 4mg TID to prevent a clozapine discontinuation rebound psychosis. When the patient's hematological indices returned to normal, the patient was begun on loxapine 10mg daily to address her newly returned paranoid delusions. Over the next three weeks, the patient's delusions continued to decrease to levels lower than they had been on clozapine. At this time, some five months after clozapine discontinuation, the delusions are only minimally present and do not result in any inference in the patient's daily life. The combination of loxapine and cyproheptadine mimic some of clozapine's action. In cases were a clozapine responder must discontinue the medication, there may be an alternative to clozapine's use. In addition, patients reluctant to take clozapine may be offered this combination to determine if clozapine may benefit them. Further assessment of this combination using standard symptom scales is indicated.

NO. 4

BODY SNATCHERS: THE NEUROPSYCHIATRY OF THE CAPGRAS DELUSION

Lead Author: Caitlin Adams, M.D.
Co-Author(s): David Diaz, M.D.

SUMMARY:

Background: Delusions are fixed, false beliefs that persist despite contradicting evidence. They range from non-bizarre—believing one's spouse is having an affair—to bizarre—believing one has been abducted by aliens. One specific delusion focuses on the belief that familiar individuals have been replaced by imposters. It can be seen in both primary psychiatric and neurologic disorders. First described in 1923, the Capgras delusion is a complex symptom that encompasses the realms of both psychiatry and neurology. Attempts have been made in each discipline to explain this particular delusion, but the separation between these is artificial and difficult to delineate. **Case:** A 57-year-old Caucasian male who carries diagnoses of schizophrenia initially presented to outpatient primary care complaining of

"anxiety plus" and was noted to be visibly anxious. He endorsed both auditory and visual hallucinations and was transferred to inpatient psychiatry for further workup. The patient described hearing deceased relatives, whom he believed were predicting future events and told him he had four brain tumors. He also endorsed delusions of control, believed his mother was trying to overtake his body. The patient believed that the women who visited him and claimed to be his mother and sister were actually imposters and that his "true family," with whom he spoke to on the phone, was living in Sweden. **Discussion:** Our ability to treat the Capgras delusion, or any delusion, really, is limited by our lack of understanding of the exact cause. From the psychiatric perspective, the delusion may be explained by a psychoanalytical or dynamic formulation of repressed feelings reemerging. The neurologic perspective focuses on a structural and functional explanation, describing the Capgras delusion as the reverse of prosopagnosia, or face blindness. With increasing use of brain imaging, more underlying neurological pathology is being identified, and a better explanation for what causes this unique delusion may be possible.

NO. 5

DEMORALIZATION: TWO CASES FROM A CANCER CENTER SETTING AND LITERATURE REVIEW

Lead Author: Crispa Aeschbach Jachmann, M.D.
Co-Author(s): Jerry Ignatius, D.O.

SUMMARY:

Background: Demoralization is a well-defined syndrome in the psycho-oncology literature and is commonly seen in specialty cancer center settings, but is little known in general psychiatry. Patients experience hopelessness, helplessness, loss of purpose and meaning, feelings of failure, emotional distress, reduced coping, and social isolation in the setting of a significant stressor, commonly serious and/or terminal medical illness. Patients do not meet criteria for mood disorders. Some patients experience a wish for a hastened death or even suicidal ideation, which may both complicate their medical treatment and prompt the issue of physician-assisted suicide. Prevalence rates of 13 – 18% have been reported among cancer and palliative patients. Here, we report on two cases of patients with demoralization syndrome seen at MD Anderson Cancer Center in Houston, Texas, and highlight the differences between major mood disorders. **Case:** Patient 1 is a 43-year-old Caucasian female with refractory, therapy-related AML, admitted to the hospital for fungal pneumonia, chemotherapy and possible stem cell transplant. She was seen by psychiatry for evaluation of anxiety. She reported intermittent emotional distress, hopelessness, feelings of failure and loss of purpose and meaning from being unable to fulfill her role as a mother, and anticipatory guilt regarding a possible transplant from her 16-year-old son. She was from out of state with poor local social support. She reported poor coping in the hospital and wanting to leave to return to her family at times. She responded well to supportive psychotherapy in the hospital and as-needed medications for anxiety. Patient 2 is a 75-year-old Caucasian male with recently diagnosed metastatic adenocarcinoma of the lung, admitted for poor PO intake and pain after stopping medications. He was seen by psychiatry for evaluation of depression. He reported a rapid decline in functioning with poor mobility and incontinence and resulting psychological distress with hopelessness, helplessness and social isolation. He had previously been very independent and now lived with his daughter. He had stopped taking his medications and eating the week before admission in an attempt to hasten his death, but denied suicidal ideation. He responded well to supportive psychotherapeutic interventions and strengthening of his connection to his family with mirtazapine for insomnia. **Conclusion:** Differentiation of demoralization from other psychiatric disorders is important due to differences in treatment. Demoralization is thought to respond best to psychotherapy with medications used in acute symptom management (e.g., insomnia and acute anxiety). Demoralization represents an under-recognized clinical syndrome among medically ill and oncological patients that deserves greater attention among general psychiatrist as more of these patients transition from specialty cancer centers to community care settings.

NO. 6

GERIATRIC OLFACTORY REFERENCE SYNDROME RESPONDING TO DULOXETINE: CASE REPORT AND LITERATURE REVIEW

Lead Author: Awais Aftab, M.B.B.S.
Co-Author(s): Samantha Latorre, M.D.

SUMMARY:

Background: Olfactory reference syndrome (ORS) is a psychiatric condition characterized by a persistent preoccupation with the false belief that one emits an offensive body odor. It frequently presents with

delusions of reference, olfactory hallucinations and repetitive behaviors. It has variously been classified as a delusional disorder, somatoform disorder, obsessive-compulsive spectrum disorder or social anxiety disorder. *DSM-5* describes ORS as a variant of taijin kyofusho and classifies it under other specified obsessive-compulsive and related disorders. **Case:** Ms. G was a 66-year-old African-American woman with a past psychiatric history of depression, anxiety and dementia and a medical history significant for coronary artery disease and heart failure with a cardiac pacemaker. She was brought to the emergency room after getting lost and endorsed feeling depressed with passive suicidal thoughts and was subsequently admitted to an inpatient gero-psychiatric unit. Ms. G was irritable with poor memory and recall, and was preoccupied with the belief that she had a terrible odor. She described the smell as rotting "worse than death" and attributed the odor to different causes: past sins, punishment from God and declining self-care. She believed the odor repulsed others, endorsed hopelessness and felt she would rather die than continue to live in this manner. Her beliefs were of delusional severity, and they were accompanied by other delusions of reference. The odor started about three months prior when she went to live in a nursing home. Her current episode of depression started after the onset of the olfactory symptoms. She had been on paroxetine 40mg daily and mirtazapine 30mg daily, but despite compliance, she continued to experience olfactory and depressive symptoms. CT head revealed extensive bilateral nonspecific white matter changes. Her EKG on admission revealed a QTc of 580msec, and cardiology recommended against using antipsychotics. She was started on duloxetine that was titrated to 40mg/day. She was also started on memantine for her dementia. By week three, Ms. G reported complete resolution of the perceived odor with resolution of death wish and significant improvement in depressed mood. **Discussion:** Literature on ORS is sparse; age of onset is in the majority of cases less than 20 years, but it has been reported in some geriatric patients in the context of depression. There is substantial comorbidity of ORS with anxiety and depression. ORS is chronic and persistent without treatment. It responds better to psychotherapy and antidepressants compared to antipsychotics. Our case is atypical given the advanced age of onset and presence of comorbid dementia. Among antidepressants, Clomipramine and SSRIs has been used, but use of duloxetine for ORS has not been reported before in literature. She responded to duloxetine, but it is unclear what contribution, if any, memantine may have had in her clinical improvement.

NO. 7

RARE CLINICAL MANIFESTATION OF NEUROSYPHILIS: ROLE OF PSYCHIATRISTS AND IMPORTANCE OF A ROUTINE SCREENING TEST

Lead Author: Saba Afzal, M.D.
Co-Author(s): Rashi Aggarwal, M.D., Manjula Chilakapati, M.D.

SUMMARY:
Background: Neurosyphilis (NS) is an infection of the brain/spinal cord caused by the spirochete Treponema pallidum. It affects patients who have had chronic, untreated syphilis. It is well-known that NS can essentially present as any psychiatric symptom. Of late, there has been a drastic worldwide increase in the incidence of syphilis, especially in urban areas. The most common psychiatric symptoms reported in new cases are dementia, depression and grandiosity. Here, we present a case of NS in an elderly man who progressively manifested personality changes and visual hallucinations over a six month period, which were initially suspected to be symptoms of dementia. **Case:** A 78-year-old male without any psychiatric history presented with 10 days of generalized weakness, multiple falls and visual hallucinations. The patient used a cane to ambulate and first fell 10 days before presentation. He was found by his son several hours later. He subsequently improved, was able to ambulate and refused a hospital visit. Two days preceding presentation, he suffered a second fall. He also reported seeing strange things and his deceased brother. He initially refused a hospital visit, but then agreed after two days. Per collateral from his wife, the patient had progressive manifestation of personality changes for six months. The patient was uncooperative, irritable and confused. Blood/urine tests and imaging ruled out drug abuse and neurological diagnosis. Psychiatry was consulted due to cognitive deficit. New acute psychiatric diagnosis was ruled out, and vitB12/folate, TSH, UA, HIV screen was unremarkable. RPR and MH-TP were also sent, and the patient was subsequently discharged to subacute rehabilitation (SAR) with diagnosis of dementia. RPR and MHA-TP came back positive two days postdischarge. SAR was contacted, and an outpatient neurology appointment was arranged. It

was concluded that the patient's gait instability, visual hallucinations, personality changes and mild dementia were most likely secondary to NS. **Discussion:** The World Health Organization estimates that 10 – 12 million new syphilis infections occur each year. Invasion of the CNS occurs early in the course of untreated syphilis. The presentation of psychiatric symptoms due to NS is identical to symptoms from any other etiology. Although NS is not widely considered in the differential of psychiatric symptoms, due to recent epidemiological data and the difficulties in differential diagnosis, routine screening tests should be considered. In clinical practice, cost has been debated; however, the outcome of undiagnosed NS also leads to economic burden on patients and health care. **Conclusion:** NS remains a diagnostic challenge because of its wide spectrum of presentation. This case highlights the importance of high index of suspicion for NS and the importance of serological tests as a routine component for evaluation of patients with psychiatric symptoms and the role of psychiatrists as consultants.

NO. 8

CASE REPORT ON MUNCHAUSEN SYNDROME

Lead Author: Fariha Afzal, M.B.B.S.
Co-Author(s): Dr. Stanley P. Ardoin, M.D.

SUMMARY:

This is the case of a 41-year-old Caucasian female admitted to a state psychiatric facility who manifests symptoms of Munchausen syndrome. Munchausen syndrome, also known as hospital addiction, polysurgical addiction and professional patient syndrome, is a factitious disorder. This case study addresses the etiology, presentation, diagnostic criteria, treatment and prognosis of Munchausen syndrome. It also focuses on differentiating between malingerers and patients with fictitious disorders who do not have material goals but crave the attention that comes with being a patient. This patient seeks repeated admissions to multiple psychiatric facilities and emergency rooms and undergoes painful invasive diagnostic tests and surgical operations, repeating the basic conflict of needing acceptance and love while expecting that she will be rejected. We conclude that early recognition of the disorder, being mindful of the clinician's own countertransference, and reframing the disorder as a cry for help is crucial in successful management of the disorder. SSRIs may be useful in decreasing impulsive behavior when it is a major component in acting out fictitious behaviors.

NO. 9

THE PRESENTATION OF SOMATIC DELUSIONS IN THE SETTING OF LYME DISEASE: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Ammar Y. Ahmad, M.D.
Co-Author(s): Jessica S. Bayner, M.D., Mohammed F. Rahman, M.D., Parveen Gill, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Post-treatment Lyme disease syndrome is traditionally characterized by fatigue, pain and neurocognitive changes. Neurologic symptoms have been clearly defined in the clinical course of Lyme disease and have been noted to include encephalopathy, polyneuropathy and severe fatigue. These neurologic symptoms have also been well-documented as sequelae of tick-borne illnesses such as Lyme disease, under the definition of neuroborreliosis. Psychiatric symptoms, however, have been more difficult to measure as readily. Previous cases have shown patients presenting with depressive symptoms and psychoses, manifested in the form of hallucinations and delusions. Of particular interest in this case report is somatization, with pain as the prevalent symptom as well as an associated somatic delusion of internal organ failure. The management of such patients is still uncertain, particularly after the standard antibiotic regimen has been fulfilled, when symptoms remain or start after the course of treatment. Practitioners must identify any underlying organic causes of a patient's presentation, such as pain, but also approach it as a possible somatic delusion. As a result, when treating those with post-treatment Lyme disease syndrome, one must consider the co-occurring psychiatric presentations. **Case:** The report considers the symptoms of a 26-year-old female patient who had previously been diagnosed with Lyme disease and had been noncompliant with the prescribed antibiotic treatment. Thereafter, the patient presented to the hospital with severe somatic delusions revolving around the thought that her body and organs were "failing." In addition, the patient complained of intermittent severe generalized pain and muscle stiffness throughout her body. Throughout the patient's hospital stay, she was consistently noncompliant with the recommended neuroleptic, antidepressant and anxiolytic medications. Consequently, no

measurable changes were observed, and the possibility of the patient having developed schizophrenia could not be ruled out. However, previous studies indicate that patients with similar presentations improved with administration of psychotropic medications. This gives rise to an exploration of the potential benefits of psychiatric drugs in the treatment of patients presenting with psychiatric illness after having been diagnosed with Lyme disease. **Discussion:** Studies have shown that patients with Lyme disease have presented with psychiatric symptoms, specifically in the form of somatic delusions. Studies have shown variable efficacy in resolution of symptoms with psychotropic treatment. Clinical pictures may also be complicated by the possibility of underlying new-onset schizophrenia. However, tick-borne illnesses empirically present a risk for neuropsychiatric changes. As a result, clinicians must be cognizant of such cases in order to appropriately treat patients with Lyme disease through a psychiatric lens.

NO. 10

CYBER-MANIA IN BIPOLAR DISORDER

Lead Author: Saeed Ahmed, M.D.
Co-Author(s): Jacob E. Sperber, M.D., Cydney Grant, M.D.

SUMMARY:

We present a case of bipolar disorder where the patient had presentation of a full manic episode with psychotic features, which is commonly seen in a psychiatric emergency room. However, when this patient was transferred to the unit for inpatient hospitalization, we tracked the longitudinal history and found a rare type of mania that we will call “cyber-mania." Our patient was found to have multiple accounts on social networks including Facebook, Twitter, Myspace, etc.; videos on YouTube; and falsification of educational background depicting an Ivy League graduate. The patient also put up a resume on the Internet portraying an extraordinary professional dealing with international relations and secret services and had a dual identity supported by numerous fabricated proofs. During the course of the patient’s hospitalization, she spent most of her recreational hours using the Internet, which involved unusual activities like ordering business cards as a security agency official, shopping online and sending emails to offices of the U.S. government. We also found that our patient has been under FBI surveillance for over a decade because of making multiple phone calls to the White House and threatening the president, including during this hospitalization. This cyber-mania was not limited to the patient’s own circle or the general public, but also extended to U.S. government offices. The most important and significant part of this mania is that our patient does not remember any of these activities: she denies having any online account or contacting any U.S. government office. We usually see this type of mania with a lengthy course and the same level of intensity despite being on the traditional treatment regimen for bipolar disorder or manic episode.

NO. 11

CAN BULLYING LEAD TO DEVELOPMENT OF DISSOCIATION IDENTITY DISORDER?

Lead Author: Sameerah Akhtar, M.D.

SUMMARY:

Background: Bullying victimization among school-aged children is an increasingly prevalent problem affecting well-being and social functioning. Children and adolescents who are victims of bullying have long exhibited signs of distress and adjustment difficulties. One study reviewed research for empirical evidence in order to determine if bullying victimization is a significant risk factor for developing psychopathologies. The research obtained from said study indicated that being the victim of bulling is associated with severe symptoms of mental health problems, including self-harm, violent behavior and psychotic symptoms. Furthermore, bullying can lead to long-lasting effects that may persist until late adolescence and contribute independently to youths’ mental health difficulties. Recognizing the marked deleterious effects of bullying on victims’ mental health demonstrates the urgency for intervention. **Objective:** This study concentrates on the potential of victimization from bullying leading to development of dissociative identity disorder. Evidence from multiple case studies is evaluated for multiple cases of bullying leading to psychological wounding and development of various psychiatric illnesses. **Case:** We report a case of a 15-year-old female of Middle Eastern descent with a past medical history of depression, a prior history of eating disorders and dissociative identity disorder who presented to a local hospital due to an unwitnessed suicidal attempt via intentional overdose. The patient reported worsening of depression due to physical abuse inflicted by peers at school. Physical abuse consisted of cutting the patient’s thigh in exchange for cigarettes and hookah

use. Reported abuse led to decompensation of depression and symptoms of suicidal ideation, early insomnia, and feelings of guilt, hopelessness and helplessness. **Conclusion:** Children and adolescents who become victims of bullying tend to develop mental health issues. With further research and understanding of the psychological aftereffects of bullying, greater screening and mediation can become feasible. A proactive and efficient approach on behalf of mental health professionals, parents and mentors may yield progressive prognosis for psychologically scarred victims.

NO. 12

SOMATIC DELUSIONS IN PSYCHOSIS

Lead Author: Sameerah Akhtar, M.D.
Co-Author(s): Dr. Asghar Hossain, Jerriel Kessel

SUMMARY:

Psychosis is a broad term that describes a distorted perception of reality. Psychosis is defined by abnormalities in one or more of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behavior, and negative symptoms. For the purposes of this discussion, the focus will be on delusions, specifically somatic delusions, manifested in a patient diagnosed with psychosis. Somatic delusions are fixed beliefs that are not amenable to change despite contrary evidence and focus on preoccupations regarding health and organ function. The patient believes that his or her body is diseased, abnormal or altered, despite negative findings on medical examination. The somatic symptoms may dominate the primary psychiatric diagnosis due to the patient's constant concern about his or her bodily functioning. Although there is a lack of research on the pathophysiology regarding the association of somatic delusions and psychosis, this relationship has been reported in a number of patients with schizophrenia, bipolar disorder and major depressive disorder. Furthermore, one cross-sectional study revealed psychotic patients with somatic delusions were more likely to be women, had lower scores on full-scale IQ tests compared with normal subjects and had low socioeconomic status. **Case:** We report on a 58-year-old Caucasian female with a chronic history of schizophrenia with multiple inpatient hospitalizations. The patient was recently admitted due to active psychosis including somatic delusions. As we evaluated the patient on the inpatient unit daily, she would present with somatic delusions including inability to hear, loss of sight, loss of taste, memory loss, etc. No medical abnormalities were assessed when the patient reported physical symptoms. The patient would approach staff and confess that symptoms spontaneously resolved; however, the subsequent day, the patient would report a new somatic delusion and state that she was severely distressed by her new physical handicap. These symptoms were ongoing daily for approximately three weeks.

NO. 13

MEDICATION-INDUCED MYOCLONUS: A CASE REPORT

Lead Author: Ahmed Albassam, M.D.
Co-Author(s): Mohamed Eldefrawi, M.D., Panagiota Korenis, M.D., Muhammad Zeshan, M.D.

SUMMARY:

Myoclonus is a clinical sign that is characterized by brief, shock-like, involuntary movements caused by muscular contractions or inhibitions. Muscular contractions produce positive myoclonus, whereas muscular inhibitions produce negative myoclonus (i.e., asterixis). Many medications that cross the blood-brain barrier could cause myoclonus, including TCAs, SSRIs, MAO inhibitors and lithium. Patients will usually describe myoclonus as consisting of "jerks," "shakes" or "spasms." The mechanisms responsible for myoclonus induced by drugs or toxins are not well-established. Furthermore, it is not clear why myoclonus occurs in some exposed individuals but not others. The time profile of exposure to the drug or toxin may be acute, subacute or chronic. Likewise, improvement in myoclonus after withdrawal may occur over an extended period. Polypharmacy can cause or worsen the drug-induced myoclonus of a single agent. Some agents, such as lithium, can cause a dose-dependent spectrum of motor cortex hyperexcitability disorders ranging from isolated cortical action myoclonus to generalized tonic-clonic seizures. **Case:** This is a case report of a 31-year-old Hispanic male with a history of schizoaffective disorder who had been admitted to our psychiatric facility for aggressive and disorganized behavior. The patient had a long history of frequent hospitalizations with ineffective treatment. He was treated with a combination of clozapine and lithium at our facility with excellent results. He became calm, pleasant, cooperative and friendly. However, the patient developed hypnotic jerks and myoclonus elicited by a casual cross straight leg raising test for back pain. The patient was successfully treated with sodium valproate over a period of two weeks with

good response. Neither clozapine nor lithium was discontinued, and the dosage of clozapine was increased from 500mg per day to 600mg per day. Providing sodium valproate as treatment for myoclonus induced by lithium, clozapine or both might be an option instead of discontinuing treatment or reduction of dosage.

NO. 14

DISSOCIATIVE RAGE: FACT OR MYTH?

Lead Author: Arshand Ali, M.D.
Co-Author(s): Lara Addesso, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: The relationship between violence and dissociation is a paradoxical yet intricately intertwined one. Previous studies indicate an increased degree of dissociation is correlated with an increase in violence in a wide range of populations. There are also, however, accounts of individuals experiencing transient dissociation during violent crime who do not meet criteria for a dissociative disorder. Dissociation is viewed as an adaptive response to childhood abuse in which the victim is unable to escape and thus psychologically attempts to distance or numb themselves. One study argues that dissociation should be considered a subtype of post-traumatic stress disorder (PTSD). This study declares that dissociation does not only occur from chronic psychological trauma, but also from acute traumatic events that lead to dissociative (peritraumatic) events. The dissociative subtype of PTSD is described as overmodulation of affect compared to the hyperarousal and re-experiencing of the unmodulated subtype. Furthermore, a case study applying Rorschach formal scoring assessed episodic rage attacks of a Vietnam combat veteran. The data suggested a near neurotic level of ego organization with extensive repression in the form of dissociated violent outbursts. **Objective:** In this review, the authors investigate the dissociative subtype referred to as dissociative rage and evidence establishing such a process as a worthy diagnosis. The primary aim of this study was to ascertain proof of supplementary reports of rage amnesia and comprehension of collective etiologies leading to development of said dissociative subtype. **Case:** We report a case of a 27-year-old Hispanic male with self-reported past psychiatric history of depressive symptomatology for approximately five years presenting with "rage, anger" issues. The patient reports impulse control difficulties and multiple past events of explosive episodes. The patient describes these episodes as losing control and "blacking out" during numerous physical altercations with his mother, uncle and former girlfriend. **Conclusion:** Dissociative rage or violent dissociation is a process of conscious disconnect during a violent outburst. It appears that past history of childhood trauma or acute traumatic events predispose individuals to violent dissociation. Due to the numerous instances of proclaimed postaggression amnesia, a dissociative rage subtype should be considered for recognition of true diagnosis.

NO. 15

TREATMENT OF PSEUDOBULBAR AFFECT WITH BUPROPION: CASE REPORT

Lead Author: Safa Al-Rubaye, M.D.

SUMMARY:

Background: Pseudobulbar affect (PBA) is a very distressful disorder of affect that is characterized by sudden uncontrollable outbursts of laughing or crying that are inappropriate to the environmental context, out of proportion to the stimuli and incongruent to the underlying emotions. It is commonly associated with traumatic brain injury (TBI), amyotrophic lateral sclerosis, stroke, multiple sclerosis, Parkinson's disease and Alzheimer's disease. Selective serotonin reuptake inhibitors (SSRI) and tricyclic antidepressants (TCA) are found to be effective in decreasing the severity and frequency of PBA. Nevertheless, dextromethorphan/quinidine (DM/Q) combination is the only FDA approved medication to treat PBA, which has been found to be effective too in randomized trials. In this case, bupropion, a dopamine and norepinephrine reuptake inhibitor, was found to be significantly effective in controlling symptoms by decreasing the severity and frequency of PBA. **Case:** A 66-year-old Caucasian male with a history of TBI and PTSD, both acquired when the patient was deployed in Vietnam in 1968, presented to the clinic to follow up for PBA (for 11 months). He was diagnosed with PBA four months ago when he was complaining of outbursts of uncontrollable laughing and crying with no attached emotions. At that time, the patient was on amitriptyline 25mg for headaches and mirtazapine 45mg for mood and sleep. Dysphagia, slurred speech and facial muscle weakness were developed two months after the PBA had started. Initially, the patient was started on citalopram 10mg daily as he refused to take

sertraline due to the sexual side effects. One month later, the patient reported a decrease in frequency of episodes. However, sertraline 25mg was reintroduced to the patient, and citalopram was discontinued, too, due to daytime sleepiness and sexual side effects. After another three months, sertraline was discontinued due to side effects and lack of improvement. After the two failed trials of SSRI, bupropion of 100mg twice a day was started. During the fourth visit (two months after starting bupropion), he reported a decrease in frequency of outbursts from several a day to a few a week. Bupropion was increased to 150mg bid. The patient was followed up two months later; a significant improvement of PBA was noticed, as affect was found to be more congruent to mood. **Conclusion:** PBA is a distressful neurological disorder. SSRIs, TCAs and DM/Q are found to be effective in treating PBA. For this particular patient, citalopram and sertraline were tried with minimal to no effect and were associated with unpleasant sexual side effects. Bupropion, a dopamine and norepinephrine reuptake inhibitor, significantly improved the symptoms by decreasing the severity and frequency of the episodes. This report suggests effectiveness of bupropion as a treatment or as adjunct for the PBA.

NO. 16

DOES TIME HEAL ALL WOUNDS? A CASE OF FIRST-TIME MANIC EPISODE AND BEREAVEMENT

Lead Author: Tarek Aly, M.D.

SUMMARY:

Robert Post's 1992 stress sensitization hypothesis describes the effects of proximal psychosocial stressors on the onset and course of bipolar disorder. This investigation focused primarily on adverse events in relation to a sensitization of stress thresholds leading to an early onset of clinical disorders. It is hypothesized that experiencing interpersonal problems was more pertinent to mania than bipolar depression. Moreover, mania onset could be described in stages similar to oncology and medicine, where stage 0 applies to the individual's known risk factor of proximal psychological stress, stage 1a and 1b corresponds to hypomania and stage 2 is the first manic episode. This case report demonstrates the validity of the hypothesis in an 18-year-old male who presented with bipolar mania on the one-year anniversary of his friend's death. Following the immediate death of his friend one year ago, he underwent stages 1a and 1b with a progression to stage 2 mania on the one-year anniversary of the event. His resistance to treatment also supports the theory that these individuals have a lack of response to treatment. Given the data supporting this hypothesis and this case, the seriousness of hypomanic symptoms in vulnerable young individuals leads us to promote the development of coping skills and stress-preventing mechanisms as a component of their treatment.

NO. 17

ALPRAZOLAM-INDUCED RHABDOMYOLYSIS ASSOCIATED WITH BUPRENORPHINE-NALOXONE MAINTENANCE THERAPY

Lead Author: Tarek Aly, M.D.

SUMMARY:

Rhabdomyolysis is a rare but well-documented adverse effect of several drugs in which muscle breakdown causes the release of intracellular muscular components into the bloodstream. CPK is commonly elevated in rhabdomyolysis, with additional findings of myalgia, weakness and dark urine. There have been several documented cases of benzodiazepine-induced rhabdomyolysis; however, the concomitant use of both buprenorphine-naloxone and alprazolam as a cause for rhabdomyolysis has not been well-documented. This is the case of a 26-year-old Caucasian male on buprenorphine-naloxone maintenance therapy who presented with severe rhabdomyolysis after acute intoxication with alprazolam. The patient complained of rapid-onset bilateral upper and lower extremity weakness with debilitating gait disturbance. Lab results on admission demonstrated elevated CPK at 1673 U/L. Urine toxicology tested positive for benzodiazepines (>4500ng/m), THC (78ng/m) and Suboxone. The patient was admitted to the intensive care unit and was treated supportively with subsequent down-trending levels of CPK. The mechanism by which concomitant use of buprenorphine-naloxone and alprazolam causes rhabdomyolysis requires further exploration. There is an increasing population of patients with opioid dependence and concurrent benzodiazepine abuse. Prescribers should be aware of rhabdomyolysis as a potential complication in patients who are taking alprazolam and buprenorphine-naloxone, and patients on maintenance buprenorphine-naloxone therapy should be closely evaluated before initiating additional pharmacological therapy with alprazolam.

NO. 18

EROTIC HYPOGLYCEMIA? A PATIENT WITH MULTIPLE EPISODES OF INSULIN OVERDOSE FOR EUPHORIC EXPERIENCE

Lead Author: Ritesh Amin, M.D.
Co-Author(s): Maira DosSantos, M.D., Ye-Ming J. Sun, M.D., Ph.D.

SUMMARY:
Background: Insulin enters the central nervous system (CNS) from the periphery via active transport and binds to insulin receptors located on dopaminergic neurons in the midbrain. The binding of insulin to these receptors results in dopamine uptake, thereby increasing dopaminergic activity in that region. The increased uptake of dopamine occurs mainly by insulin's effect on the expression of dopamine transporters (DAT) on the cell surface, as evidenced by several studies that have shown that blocking insulin results in decreased cell surface expression of DAT. Dopaminergic activity is of great interest in the field of psychiatry, particularly in the subspecialty of substance abuse and addiction, as dopamine is known to play a role in reward function. We report the case of a 42-year-old, single African-American male with past psychiatric history of MDD, multiple past suicide attempts and a past medical history of uncontrolled type 2 diabetes mellitus and hypertension, who presented to a psychiatric unit after attempting suicide via insulin overdose. Upon being questioned about the thoughts and emotions experienced after injecting himself, the patient reported euphoric effect similar to receiving opioid analgesics postoperatively in the past. The patient denied a history of substance abuse. While admitted, the patient was put on sertraline for depression and risperidone as adjunct. He was often seen participating in group therapy; his mood progressively improved with treatment. In an effort to decrease this patient's risk of suicide after discharge, arrangements were made for the patient's insulin to be administered by either his mother or the day program he attends every weekday. **Discussion:** This case highlights the potential for insulin as a substance of abuse. The development of addiction-like behavior in the setting of insulin-induced hypoglycemia is not commonly encountered, but there is evidence in the literature to support this potential threat. Practitioners should keep this possibility in mind when treating patients on insulin, particularly those with known psychiatric illness or a history of frequent hypoglycemic events.

NO. 19

ARIPIPRAZOLE TREATMENT FOR HALLUCINATIONS IN A PATIENT WITH PTSD

Lead Author: Aaron K. Andersen, D.O.
Co-Author(s): Micah J. Sickel, M.D., Ph.D.

SUMMARY:
Background: Post-traumatic stress disorder (PTSD) is a complex mental disorder with some studies describing patients who exhibit psychotic features during the course of their illness. A large epidemiological study conducted in 2005 indicated that about half of PTSD patients experience psychotic symptoms at some period during their lives. While there is a growing body of research examining the benefits of antipsychotic medications for treatment of PTSD symptoms, few studies have examined the efficacy of antipsychotics in treating psychotic symptoms in this population. Two randomized controlled trials indicated that the use of risperidone in PTSD led to significant improvements in the Positive and Negative Syndrome Scale (PANSS). Additionally, several open label studies looking at combat PTSD also showed significant reductions in PANSS scores with the use of olanzapine, risperidone, quetiapine and fluphenazine. While it is clear that more research is needed on these medications, there appears to be an even greater paucity of research with regard to the use of aripiprazole. In a 2012 open label study, researchers looked at PANSS scores in PTSD patients taking aripiprazole over a 12-week period (mean dose was 21.5mg). Results indicated statistically significant improvements in psychotic symptoms. Despite these encouraging initial findings, further research will be needed to determine the efficacy of aripiprazole for psychotic symptoms in PTSD. **Case:** This patient is a 35-year-old male with a family history of schizophrenia who met *DSM-5* criteria for PTSD. He had suffered from PTSD symptoms over a four-year period after experiencing multiple combat traumas during his military deployment. He had also previously experienced several major depressive episodes over the course of his illness. His most impairing symptoms, however, were auditory hallucinations, which he experienced even during long periods of complete remission from his depression. The hallucinations would occur frequently throughout the day and would sometimes act as a trigger for his PTSD symptoms. A full workup for medical etiologies of his hallucinations yielded unremarkable findings. The patient reported significant improvement in his depression and moderate improvement in his PTSD symptoms after

receiving prolonged exposure therapy and a combination of escitalopram 20mg and prazosin 6mg. Despite these treatments, his hallucinations remained unaltered. He was initially tried on risperidone, which was discontinued due to the patient reporting excessive daytime sedation at 6mg. He was subsequently switched to aripiprazole 15mg, which led to significant improvement in his hallucinations (they continued to occur very briefly in the evening but were no longer distressing to him). **Conclusion:** This case report suggests a potential role for aripiprazole in the treatment of PTSD patients who experience psychotic symptoms.

NO. 20

TREATMENT OF MANIA SECONDARY TO HIV

Lead Author: Yohanis L. Anglero Diaz, M.D.
Co-Author(s): B. Jeanne Horner, M.D., Pedro Fernandez, M.D.

SUMMARY:

Background: Mania in patients with HIV infection has been documented since the beginning of the epidemic, and up to 8% of patients who were not on HAART treatment and without history of bipolar disorder have been found to have had symptoms of mania. Although consensus is that initiating HAART is the first step in treatment, there are no formal guidelines on how to treat symptoms of mania during the period of time it takes for CD4 counts to increase. Literature review revealed case reports of mania secondary to HIV infection treated with risperidone, ziprasidone and ECT. **Methods:** We present the case of a 38-year-old male with a history of cocaine use disorder, no prior history of bipolar disorder, HIV positive, and not on HAART who was medically admitted due to changes in mental status. Collateral information revealed changes in the patient's behavior for three weeks, which consisted of paranoia and hyper-religious behaviors. Prior to evaluation, he had been seen in different outpatient clinics and was documented as a poor historian with memory deficits. His CD4 count was 88. Infectious work-up was completed, and opportunistic CNS infections were ruled out. His urine toxic screen was negative. Psychiatry was consulted and found the patient to be tangential, with pressured speech, euphoric mood and cognitive deficits. He was started on valproic acid and olanzapine twice daily and was restarted on HAART. His symptoms of mania improved, and he and was discharged. Three weeks later, he was readmitted for altered mental status and was again found to have symptoms consistent with mania. He had not been compliant with treatment. The HAART regimen was restarted along with valproic acid and olanzapine. His symptoms of mania improved, and he was discharged on Olanzapine 5mg in the morning, 10mg at bedtime and Valproic acid 750mg twice daily. Six weeks later, he was seen in the infectious disease clinic. He remained compliant with treatment and was no longer presenting with symptoms of mania. **Results:** Valproic acid and olanzapine were effective in treating symptoms of mania secondary to HIV infection. **Conclusion:** In addition to initiating treatment with a mood stabilizer and an atypical antipsychotic, reinitiating HAART treatment and connecting the patient to resources that increased medication compliance was essential.

NO. 21

INTERESTING CASE HIGHLIGHTING TYPICAL ANTIPSYCHOTIC-INDUCED DEPRESSION AND OLANZAPINE-FLUOXETINE-INDUCED MANIA

Lead Author: Darinka Aragon, M.D.
Co-Author(s): Debbie Chang, Lawrence Faziola, M.D.

SUMMARY:

Background: We present a case of a patient with schizoaffective disorder who developed depression from fluphenazine and then developed mania from olanzapine-fluoxetine. **Case:** The patient is a 45-year-old male with a long history of schizoaffective disorder who came into the hospital very disorganized and agitated. He was started on olanzapine titrated up to a dose of 20mg twice a day. Since the patient remained disorganized, olanzapine was tapered off, and fluphenazine was titrated up to a dose of 10mg twice a day. After two weeks, the patient appeared at baseline. However, after a month, the patient became withdrawn, reporting depression with suicidal ideations. He was then started on fluoxetine titrated up to a dose of 40mg daily; fluphenazine was tapered off, and olanzapine was titrated up to a dose of 20mg nightly. After two weeks on this regimen, he was noted to have developed multiple symptoms of mania and psychosis. Fluoxetine was subsequently discontinued. Fluphenazine was restarted and increased to a dose of 10mg in the morning and 15mg at night, and olanzapine was tapered off. The patient remained in a manic episode with no improvement in symptoms after switching back to a higher dose of fluphenazine and had to be transitioned to clozapine. **Discussion:** Typical antipsychotics are known to cause neuroleptic-

induced dypshoria. This was first described in 1973, when researchers found that haloperidol caused some patients to experience decreased social and verbal interactions. These results were reproduced in a study where dysphoria was induced in 40% of 51 healthy participants after haloperidol administration. Similar results have been reported in studies involving other typical antipsychotics, including chlorpromazine and fluphenazine. Because typical antipsychotics are potent D2 dopaminergic antagonists, dopamine may be responsible for these reactions. Treatment-emergent mania is a clinical concern when treating patients with schizoaffective disorder or bipolar disorder. Inducing mania can have negative effects on illness progression, causing diminished responsiveness to subsequent treatments, as in this patient. Studies have shown that olanzapine-fluoxetine combinations carry a low risk of mania emergence. In an eight-week randomized, double-blind, placebo-controlled trial of olanzapine monotherapy and olanzapine-fluoxetine combination in the treatment of depression in bipolar I disorder, treatment-emergent mania in olanzapine-fluoxetine was low (6.4%) and similar to olanzapine monotherapy (5.7%) and placebo (6.7%). A 24-week open label study of olanzapine-fluoxetine combination and olanzapine monotherapy in treatment of bipolar depression also reported a low rate of treatment-emergent mania (around 5.9%). This case highlights the importance of keeping drug-induced depression and mania in mind when treating psychiatric patients.

NO. 22
WITHDRAWN

NO. 23
LITHIUM TOXICITY IN A BARIATRIC SURGERY PATIENT: A CASE REPORT
Lead Author: Shahana Ayub, M.D.
Co-Author(s): Mahalet Zewde Welde Semat, M.D., Kushon Donald, M.D.

SUMMARY:
Gastric bypass surgery as a treatment for morbid obesity has become more common in the last 10 to 20 years, particularly after the introduction of laparoscopy. A significant number of patients undergoing gastric bypass surgery have some form of psychiatric illness, particularly mood disorders, anxiety and low self-esteem. One study suggested that as many as 45% of patients have psychiatric illness amongst 29% of these patients having depressive disorders. One of the articles reported that 34% of Roux-en-Y gastric bypass (RYGB) preoperative patients (n=74) were taking psychotropic medications, some of which may be affected by the anatomic and physiologic changes related to gastric bypass. Unfortunately, there is a paucity of research literature on psychotropic medications and gastric bypass surgery. We report a case of a 36-year-old woman with morbid obesity (BMI 43), bipolar II disorder, panic disorder, a history of traumatic brain injury, benign intracranial hypertension, diabetes, endometriosis, intractable migraines and hypertension who underwent a laparoscopic Roux-en-Y gastric bypass. She had been well-maintained on extended release lthium carbonate 300mg TID until three months after RYGB. The patient presented with diffuse, cramping abdominal pain; nausea; vomiting; and decreased tolerance for solid oral intake and polydipsia. Three days later, she developed mental status changes, with increased anxiety, diaphoresis, bradycardia, slurred speech and unsteady gait and on examination was found to be dehydrated. The electrolyte panel revealed hyponatremia and hypokalemia (Na 131, K=3.3). Her BUN/creatinine were 18 and 1.12 respectively. Her baseline creatinine was 0.98. Her lithium level was 2.2. ECG revealed a prolonged QTc interval of 605ms. Her lithium was discontinued; in addition to the dehydration, we suspect that there was change in absorption of lithium carbonate through her GI tract secondary to RYGB.

NO. 24
TAKOTSUBO CARDIOMYOPATHY: RARE CARDIAC SYNDROME LINKED TO NEUROPSYCHIATRIC ILLNESS
Lead Author: Shahana Ayub, M.D.
Co-Author(s): Kushon Donald, M.D.

SUMMARY:
Takotsubo (stress) cardiomyopathy is a rare cardiac syndrome representing an acute heart failure that is associated with a substantial risk for adverse events. Literature review suggests a higher prevalence of anxiety and depression among patients with takotsubo cardiomyopathy (TTC). The uneven sex distribution among patients with TTC (female-to-male ratio, 9:1), with the majority consisting of postmenopausal women, is in line with most previous reports from Western countries. We observed a case of TTC at one tertiary care center preceded by and concurrent with exacerbation of

psychiatric illness. A 52-year-old Caucasian woman with diagnosed major depression and post-traumatic stress disorder was transferred from an outside hospital after taking an overdose of sleeping pills, presenting with chest pain and T wave inversions on electrocardiogram. Cardiac catheterization revealed apical ballooning, consistent with a diagnosis of takotsubo cardiomyopathy (LVEF=30 – 35%). She was subsequently hospitalized and was transferred to the med-psych unit for psychiatric stabilization, treatment of her depression and severe psychotic symptoms that developed within a period of days. An echocardiogram seven days after the diagnosis of TTC revealed LVEF of 50%. Our case shows exacerbation of her psychiatric illness just prior to and co-occurring with her diagnosis of TTC. In this case, the psychiatric illness seemed to be the underlying cause of the patient's ongoing stress as well as exacerbation of any of her stressors leading to TTC.

NO. 25

SYNTHETIC CANNABINOID USE IN PREGNANCY: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Mallikarjuna Bagewadi Ellur, M.D.
Co-Author(s): Cedrick Barrow, D.O., Carolina Retamero, M.D.

SUMMARY:

Background: There is increased incidence in abuse of designer drugs, most commonly, synthetic cannabinoids (SCs), by pregnant teenagers. SCs are known by the street names "K2" and "Spice." Our knowledge of the effects of SC use in pregnancy is limited due to a paucity of studies and relatively short history of these drugs. The majority of SC users are adolescents and young adults who perceive SCs as safer than noncannabinoid illicit drugs and a favorable cannabis alternative eliciting a cannabis-like "high" while avoiding detection by standard drug screens. The current knowledge reveals that SC use in humans causes various acute and long-term psychiatric disturbances and medical complications. The acute manifestations could include anxiety, exacerbation of paranoid delusions, delusions of control, auditory and visual hallucinations, thought disorganization to the extent of psychosis, agitation, paranoia, Capgras' delusions, and ideas of reference. Isolated SC use for first time in late pregnancy and its effects are not well-known. **Case:** The authors present the case of a 33-week pregnant, 19-year-old African-American female with a history of schizophrenia and depression and no significant medical history, who was admitted to the inpatient psychiatric unit for psychosis. She denied recent use of alcohol, other illicit drugs or cannabis, but admitted to smoking K2 two days prior to arrival. Her multi-panel urine drug screen was negative for illicit substances. Her mental status examination revealed paranoia and visual and auditory hallucinations. Her physical examination was notable for pregnancy of approximately 34 weeks. Laboratory tests were within normal limits. She was treated with oral haloperidol with marked improvement. **Methods:** Review of patient's chart and a PubMed search was conducted using the terms psychosis, synthetic cannabinoids, pregnancy and cannabis. **Discussion:** Our case underscores the importance of psychiatric disturbances in pregnancy due to use of synthetic cannabinoid (K2) in the absence of organic causes and other drugs/alcohol use. There is no standard urine drug screen for synthetic cannabinoids due to changing trends in manufacturing, mixing and addition/deletion of designer molecules periodically. Communication between obstetricians and psychiatrists and provider education about these new drugs of abuse is pivotal in the correct diagnosis and treatment of these patients throughout their pregnancy, delivery and postpartum periods. More research is needed on the effects of these substances in pregnant patients.

NO. 26

TRAZODONE-INDUCED NIGHTMARES

Lead Author: Nicholas P. Basalay, M.D.
Co-Author(s): Joseph E. Kent, M.D., Ankit Chalia, M.D., Ashish Sharma, M.D.

SUMMARY:

Trazodone is an antidepressant approved by the FDA in 1981, and due to its sedating properties, it's more commonly used for insomnia. It has been reported to be useful in ameliorating nightmares in patients with depression. We report a unique case of emergence and worsening of nightmares with trazodone in a dose-dependent manner. **Case:** Mr. A. is a 63-year-old male with a past medical history of follicular non-Hodgkin lymphoma grade 1, asthma and hypertension. He was diagnosed with lymphoma six years ago and has received 30 treatments of field radiation. Earlier this year, lymphoma was found to be recurrent, and he was experiencing a great deal of stress, concentration issues and sleep disturbance. He had been feeling depressed for two months and was started on duloxetine 30mg daily one month earlier. Since that time, he has been

having trouble sleeping. He was then started on trazodone for sleep and titrated to 150mg. He began to have very terrifying nightmares, which included people needing his help, acts of violence and other images so disturbing he did not want to talk about them. He denied any alcohol or illicit drug use history. He continued to have difficulty sleeping, which was compounded by his nightmares, so his dose of trazodone was increased. After the increase in trazodone, his nightmares became worse. At that point, trazodone was discontinued, which resulted in complete resolution of his nightmares. **Discussion:** The prevalence of prescription medications commonly used for insomnia (MCUFI) has been on the rise. Studies suggest 3% of adults have used MCUFI in the preceding month. Trazodone and zolpidem are the most commonly used. Serotonin, dopamine and norepinephrine neurotransmitters have a functional role in production of dreams. Medications altering these neurotransmitters are likely to induce nightmares and disordered dreaming. Trazodone has 5-HT2a, 5-HT2c, alpha 1-adrenoceptor and histaminergic (H1) antagonistic properties. The H1, 5-HT2a and alpha 1 antagonistic properties make trazodone effective for insomnia. In a study of patients with depression, trazodone increased sleep efficiency, total sleep time, REM duration and NREM stage 3 sleep. One possible mechanism for this phenomenon is that meta-Chlorophenylpiperazine, a metabolite of trazodone, and also a known hallucinogenic, is formed while the patient sleeps. These metabolites then facilitate nightmares through their hallucinogenic properties. Meta-Chlorophenylpiperazine (mCPP) first appeared on the illicit drug scene in 2004 in European nations, including France. mCPP has affinity for serotoninergic receptors and its transporter. Effects in users have been similar to those of amphetamines and NMDA. Intoxication is not common in most patients; however, it is found to be more prevalent in patients with a history of psychiatric disorder. Therefore, our patients are at a higher risk for intoxication and potentially adverse effects, including nightmares.

NO. 27

SCHIZOAFFECTIVE DISORDER AND COMORBID BARTTER SYNDROME: A CASE REPORT

Lead Author: Jessica S. Bayner, M.D.
Co-Author(s): Pankaj Manocha, M.D., Asghar Hossain, M.D.

SUMMARY:

In the acute presentation of psychiatric illnesses, precipitating factors often include noncompliance to medication and psychosocial stressors. Patients diagnosed with schizoaffective disorder may endorse mood or psychotic symptoms that indicate a period of decompensation. However, one must not overlook the significant effect that an electrolyte imbalance may have on one's mental state. Changes in potassium chloride and sodium have been well-documented to affect the body systemically, as well as the mind. This may especially be seen in those afflicted with Bartter syndrome, a rare autosomal recessive renal tubular disorder characterized by metabolic abnormalities such as hypokalemia, hypochloremia, metabolic alkalosis and hyperreninemia. A related case report is presented of a 50-year-old Caucasian male with schizoaffective disorder as well as comorbid Bartter syndrome. He presented with a severe manic episode, which involved impulsive behavior, reckless driving, increased spending and flight of ideas. The patient also endorsed racing thoughts with decreased need for sleep, increased energy, euphoria and grandiose delusions. Upon evaluation in the emergency department, the patient's lab work revealed abnormalities, with significant hypokalemia and decreased serum magnesium levels. The patient was treated appropriately, and his electrolytes were repleted. By the next day, the patient's symptoms resolved, and he was deemed stable and appropriate for discharge. The objective of presenting this case report is to consider the appropriate management plan for patients presenting acutely with psychotic and/or mood symptoms. This particularly applies to patients with psychiatric illnesses and medical comorbidities. Attention must be paid to changes in electrolytes, as their impact on psychiatric symptoms has been evident in patients with both schizoaffective disorder and Bartter syndrome. Emphasis is placed on the importance of ruling out and treating an underlying medical condition before treating psychosis, mania, depression or anxiety.

NO. 28

CASE REPORT: FIVE SUPPLEMENTS AND MULTIPLE PSYCHOTIC SYMPTOMS

Lead Author: Robert G. Bota, M.D.
Co-Author(s): M. Wong, A. Darvishzadeh, N. Maler

SUMMARY:

Dietary supplements, including vitamins, minerals, herbs, amino acids and enzymes, have become increasingly more common and are used by about

half of the U.S. population. About three fourths of supplements are obtained without being prescribed by a physician, which raises medical concerns for safety, as these products do not require FDA approval. Common reasons for taking dietary supplements include improved mood, improved mental function, relief of depression, reduction in anxiety, and treatment of simple and migraine headaches. The use of herbs for medicinal purposes has a long standing history among many cultures. We present a case of a 43-year-old engineer with a six-month history of psychotic symptoms that increasingly caused impairment in functioning, eventually leading to involuntary hospitalization. He improved over the course of four days. The authors discuss the published data about supplements causing psychosis, herb to herb interaction and reliability of herbal supplement manufacturers.

NO. 29

LATE-ONSET BIPOLAR DISORDER: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Matthew Boyer, B.A.
Co-Author(s): D. Scott Murphy, M.D., Suzanne Holroyd, M.D.

SUMMARY:

Bipolar disorder with onset after age 50 is commonly referred to as late-onset bipolar disorder. Approximately 10% of cases of bipolar disorder have onset after age 50. Late-onset bipolar disorder may differ from earlier-onset bipolar disorder both in etiology and presentation. For example, there is evidence suggesting cerebrovascular pathology may play a role in the etiology of late-onset bipolar disorder. Presenting symptoms may be different in that patients with late-onset bipolar disorder are more likely to have cognitive impairment and less likely to experience hypersexuality, substance abuse or anxiety. Furthermore, patients with late-onset bipolar disorder tend to have longer hospitalizations than those with early onset. Diagnosis requires a thorough work up to rule out secondary causes such as drugs, metabolic disturbances, infection, neoplasm and other toxins. In this case, we describe a 67-year-old female who presented with new-onset bipolar mania. She was brought to the emergency department after a neighbor found her wandering outside, seemingly confused. In the emergency department, the patient was agitated and psychotic. She was yelling at visual hallucinations of dogs and people. Collateral information confirmed that the patient had recently developed restlessness, excessive shopping, financial mismanagement, paranoia and poor sleep. Her son and a friend also reported that the patient had a strong family history of bipolar disorder. She was described as having been a moody person throughout her life. However, there was no prior psychiatric history until a suicide attempt by overdose four years prior in the setting of her husband's sudden death. Although she was admitted to a psychiatric unit at that time, she was discharged after one day and did not have any psychiatric follow-up. She had been living independently since that time without further mood episodes. During the current hospitalization, the patient walked excessively in the hallways, insisted on dancing and frequently sang, making up songs about the medical staff. She was diagnosed with late-onset bipolar disorder – mania with psychosis, and treatment with quetiapine was begun. Additional details of the case and how it relates to the known risk factors for late-onset bipolar disorder will be discussed.

NO. 30

SYNTHETIC CANNABIS: DIVERSE CASE PRESENTATIONS, LITERATURE REVIEW, AND TREATMENT MODALITIES AND RECOMMENDATIONS IN THE ADOLESCENT POPULATION

Lead Author: Dakota Carter, M.D.
Co-Author(s): Taiwo Babatope, M.D., Iram Kazimi, M.D.

SUMMARY:

Background: Synthetic marijuana, also known as "Spice," "K2," "Kush" and various other names, has grown in use within the past few years, especially in the adolescent/young adult population. The drug presents various challenges related to medical and psychiatric care needed during intoxication and withdrawal and with residual effects of its use. It also presents legal, public health and community-based ramifications with its growing use and negative health outcomes. We present a review of cases with self-disclosed synthetic marijuana use with specific symptomology of psychosis, autonomic nervous system instability, stereotyped behaviors and other medical findings to varying degrees in three adolescents with diverse history and presentations. In addition to these cases, we present a literature review, recommended treatment and further needs for education and prevention. **Case:** Adolescent 1: An 11-year-old African-American male with no past medical history presents with psychosis/autonomic

instability after first-time use of synthetic marijuana. Adolescent 2: A 17-year-old Hispanic male with no past medical history presents with psychosis and autonomic instability after years of marijuana and synthetic marijuana use. Adolescent 3: A 17-year-old Hispanic male presents with mania and psychosis after two months of synthetic marijuana use. Review of Literature, Treatment Modalities and Recommendations: Screening: Our cases illustrate a need for proper screening for possible synthetic marijuana abuse; as the substance is not found in commonly-used toxicology screening, asking patients and family is one of the strongest tools to determine treatment and prognosis. Various medical laboratory findings can be nonspecific (elevated CPK, electrolyte abnormalities, ABG findings, LFTs and kidney functioning, etc.), so it is important to include this substance on a differential diagnosis for a new onset or worsening psychosis in the youth population. Psychopharmacology: Patients presenting with psychosis in the context of synthetic marijuana use are treated using antipsychotics and benzodiazepines as necessary. We review other treatment models and what our team used for our patients. Psychotherapy and long-term care: Our cases represented treatment in an inpatient setting meant to stabilize acutely ill patients. As presented in the cases and in the literature review, patients can benefit from cognitive behavioral therapy, voucher-based incentives, self-help groups and motivational enhancement therapy. Patients should also be managed by outpatient psychiatrists for these residual symptoms until they dissipate. Education and prevention: Prevention is key. Educating adolescents, parents and health care providers on this illicit substance may help reduce use and recognition. There is a need to work with government agencies and basic science and clinical researchers to improve laws and evidence-based treatments for synthetic marijuana.

NO. 31

CHILDHOOD FUNCTIONAL ABDOMINAL PAIN SYNDROME

Lead Author: Amarsha Chakraburtty, M.D.
Co-Author(s): Sarah E. Krajicek, M.D., Phebe Tucker, M.D.

SUMMARY:

Background: Functional abdominal pain syndrome (FAPS) is common in children with complaints of chronic abdominal pain. FAPS, as described by the American College of Gastroenterology, is one of the functional, or nonphysiologic, gastrointestinal disorders and corresponds to the DSMÂ–5 psychiatric diagnosis of somatic symptom disorder with predominant pain. Patients with functional abdominal pain syndrome have a high rate of health care utilization and of school/work absenteeism contributing to an economic burden to both the patient and the health care system. It is very important to quickly identify and treat these patients appropriately without perpetuating unnecessary workups. **Case:** An 11Â–yearÂ–old girl was seen in December at her local emergency room for chronic generalized abdominal pain that began in August and was unrelated to defecation or eating. She had just started the sixth grade and had been missing classes frequently secondary to her “constant tummy ache." Complete blood count, electrolytes, renal function and urinalysis were all within normal limits, and the fecal occult blood testing was negative. On physical exam, she was timid and had exaggerated responses to periumbilical palpation. However, she showed normal behavior when distracted by conversation and outside commotion. Her family history was negative for any known inherited disorders. Social history was significant for her parents’ recent divorce. Screening abdominal ultrasound was negative for gross lesions or gastrointestinal inflammation. **Discussion:** The best initial step in the evaluation of a patient with chronic abdominal pain is to take a full history and physical. Laboratory evaluation begins with a complete blood count with differential and erythrocyte sedimentation rate, urinalysis, urine culture and urine pregnancy test. Additional studies may be considered based upon the history and physical. Radiologic evaluation of patients with chronic abdominal pain is based upon the possible etiologies of the pain. The cornerstone of management in FAPS is facilitating a therapeutic relationship with one physician. The primary goal of treatment is to be able to return to normal function; relief of symptoms is a secondary goal of treatment. Of particular importance for the treatment plan is a large emphasis on return to school. Avoiding reinforcement of pain behaviors such as providing extra attention, rest, special treatment or unnecessary medication is key. Psychotherapy techniques shown to be efficacious in FAPS include cognitive behavioral therapy and biofeedback. Many pharmacological therapies have been shown to be potentially beneficial in the treatment of FAPS, including H2 blockers, SSRIs and SNRIs. Regular follow-up for these patients is very important, and

referral to a behavioral pediatrician or adolescent medicine specialist can help with the chronic management of these patients. Prognosis is good and spontaneous remission is common in FAPS.

NO. 32

CASE REPORT: RENAL TRANSPLANTATION IN A PATIENT WITH SCHIZOAFFECTIVE DISORDER, BIPOLAR TYPE

Lead Author: Monika Chaudhry, M.D.
Co-Author(s): Stephanie Tung, M.D., Kimberly Parks, M.D., Arya Khosravi, Ph.D., Dave Baron, D.O.

SUMMARY:

Background: Patients with mental illness are thought to have higher rates of morbidity and mortality following organ transplantation. While the majority of transplant programs require a pretransplant psychosocial evaluation, psychosocial criteria for transplant vary greatly. Patients with controlled psychotic illness can be appropriate candidates; however, data are limited about post-transplant risks. Here, we discuss a patient with schizoaffective disorder who mentally decompensated postoperatively. **Case:** The patient is a 65-year-old Caucasian man with schizoaffective disorder, bipolar type, on clozapine and end-stage renal disease. Three years prior to transplant, the patient underwent a psychosocial evaluation and received a Stanford Integrated Psychosocial Assessment Test score of 16: acceptable for transplant. Psychiatry was consulted on postoperative day (POD) 1 to help reinitiate psychiatric medications. The patient showed normal frustrations, but was upset his kidney donor had died of drug overdose as his son had recently died of an overdose. Before restarting clozapine, the patient became paranoid on POD 2. He asked to return the kidney and was suicidal. Once restarted, the patient slowly improved. After four months, he began refusing all medications. He was hospitalized at a psychiatric inpatient facility for psychosis and poor oral intake. After developing seizures, he was transferred back to the transplant center. He was psychotic; he felt the medications were poison and wished to kill himself with them. Due to a low absolute neutrophil count, alternative psychiatric medications to clozapine were started. Slowly, the patient began taking medications and eating. When stable, the patient was transferred back to the psychiatric hospital. **Conclusion:** A case series by Coffman and Crone (2002) found that lack of support, psychosis within the last year and suicidal thoughts correlated with poor medication adherence. This may cause significant mortality. Prior to transplant, our patient was found to be stable psychiatrically and an appropriate candidate, but prior to surgery, significant life changes increased his risk of psychosis. This case shows the need for ongoing psychosocial evaluation prior to surgery in psychiatric patients and collaborative follow-up care.

NO. 33

CHALLENGES IN DIAGNOSING FACTITIOUS DISORDER: A CASE REPORT

Lead Author: Raminder Pal Cheema, M.D.
Co-Author(s): Panagiota Korenis, M.D., Muhammad Zeshan, M.D., Ahmed Albassam, M.D.

SUMMARY:

Factitious disorder (Munchausen syndrome) is characterized by falsified general medical or psychiatric symptoms. It may manifest itself as the falsification of medical or psychiatric symptoms imposed on oneself or others. The name factitious comes from a Latin word that means “artificial” or “contrived." Factitious disorder (FD) appears in medical literature dating back to the 2nd century A.D., although the term factitious was first coined in 1843. Factitious disorder was recognized as a formal diagnostic category by DSM-III in 1980 and was further classified into three major subtypes in *DSM-IV-TR*. The estimated lifetime prevalence of factitious disorder imposed on self in clinical settings is 1%, and in the general population, it is estimated to be approximately 0.1%, with prevalence ranging widely across different studies from 0.007% to 8%. According to one estimate, FD costs the United States $40 million per year, but the financial impact of factitious disorder is much higher than current estimates in context of underdiagnosis. Current literature relates factitious disorder to be more likely to occur in females, unmarried individuals and health care workers (past or present), with no clear etiology and pathogenesis implicated in the literature. However, there is documented association with psychosocial factors, neurocognitive impairment and neuroimaging abnormalities, which may play predisposing and precipitating roles in pathogenesis. **Case:** Here we present a 60-year-old man with factitious disorder who has numerous multiple medical comorbidities, substance use and a long history of treatment noncompliance. He has multiple inpatient hospitalizations in both the psychiatric and medical settings along with

numerous and frequent emergency room visits. A review of records indicates that he has been hospitalized for more than 300 days per year over the past five years. **Discussion:** Factitious disorder is vastly underdiagnosed, poorly understood and infrequently reported in the medical literature, mostly related to atypical presentations rather than emphasizing overall impact of the disorder on the health care system. This case report aims to emphasize the need to educate mental health professionals about its high incidence in the United States. Further, we aim to explore the efficacy of treatment options currently available. **Conclusion:** Our poster will review the literature surrounding factitious disorder and discuss treatment implications and strategies for such complicated patients.

NO. 34

CLOZAPINE-INDUCED TACHYCARDIA: CLINICAL CONSIDERATIONS

Lead Author: Yon J. Chong, M.D., M.P.H.
Co-Author(s): Venkata Kolli, M.B.B.S.

SUMMARY:

Objective: Using a clinical case, we will review 1) The current literature on causes and presentations of clozapine induced tachycardia and 2) The management of clozapine-induced tachycardia and differentiating it from more dangerous clozapine-induced myocarditis. **Background:** Clozapine is an atypical antipsychotic reserved for antipsychotic treatment resistance in schizophrenia. With early-onset schizophrenia often exhibiting a poor prognosis, most treatment guidelines recommend clozapine use with two antipsychotic failures. Clozapine is reported to have utility in improving the negative cognitive, anxious and depressive symptoms associated with schizophrenia. Tachycardia is a common side effect with clozapine, but at the same time could be a warning sign of a more severe, sometimes fatal, clozapine-induced myocarditis. Here, we report a case of clozapine-induced tachycardia and its management in an outpatient setting. **Case:** A 15-year-old female with a *DSM-5* diagnosis of schizophrenia was started on clozapine after her sixth psychiatric hospitalization and three antipsychotic failures. Following a clozapine dose increase to 150mg, the patient started experiencing palpitations and an increased pulse. The patient and her family were concerned about clozapine's cardiac toxicity. It was imperative at this stage to rule out clozapine-induced myocarditis; therefore, electrocardiogram and cardiac enzymes were obtained. As it was discussed with family members that these investigations may not be sensitive enough, pediatric cardiology was consulted, and they performed a transthoracic echocardiogram. The echocardiogram did not reveal any wall motion abnormalities and assisted in ruling out any myocarditis. Following these investigations, the treatment team increased the dose of clozapine further to 100mg in the morning and 300mg at bedtime. **Discussion:** Clozapine-induced myocarditis is as prevalent as agranulocytosis. The risk of this adverse effect is higher in the first two months of clozapine initiation. The symptoms are often nonspecific. Tachycardia and elevated temperature occur in approximately 40 to 50% of patients with diagnosed clozapine-related myocarditis. However, these symptoms could be due to anticholinergic actions of clozapine as well. Electrocardiogram and cardiac enzymes are common initial screens. However, their sensitivity is low at 66% and 33%, respectively, and using transthoracic echocardiogram is becoming increasingly popular. Myocardial biopsies have also been used in the past to confirm the diagnosis. **Conclusion:** As clozapine-induced myocarditis can be fatal, clinicians should be well-versed with this potential dangerous side effect and its management.

NO. 35

SELF-INDUCED DKA IN A PATIENT WITH DIABETES TYPE 1 AND ANOREXIA NERVOSA WITH COMORBID DEPRESSION AND ANXIETY: A CASE REPORT

Lead Author: Mehak Chopra, D.O.
Co-Author(s): Jeisson Hernandez-Fontecha, M.D., Rachit Patel, M.D.

SUMMARY:

Objective: Report a case of diabulimia presenting with comorbid depression and anxiety. **Background:** Diabetes mellitus type 1 (DM1) is understood to be an autoimmune condition characterized by destruction of insulin-producing pancreatic beta cells, and it usually manifests before the age of 20. Patients with eating disorders commonly exhibit behaviors such as food restriction, binging, excessive exercise and/or vomiting. It is known that disordered eating is twice as likely to occur in teenage girls with DM1. In this condition, known as "diabulimia," individuals misuse insulin for weight control. The comorbidity of diabulimia and other psychiatric disorders has not been well-documented. We present a case of a patient with diabulimia with

comorbid depression and anxiety. **Case:** The patient is an 18-year-old Caucasian female with a medical history significant for Hashimoto's thyroiditis, diabetes mellitus type 1 (DM1) diagnosed at age four and an eating disorder diagnosed at age 14 after repeated episodes of self-induced diabetic ketoacidosis (DKA). The patient had completed three inpatient eating disorder programs, totaling approximately five months of treatment. While the patient reported that these programs helped, the effects were short-lived, and she has had annual episodes of DKA. The patient was admitted for a repeat episode of DKA and was evaluated by psychiatry. In conjunction with diabulimia, the patient presented with symptoms of depression and anxiety, including subjective low mood, anhedonia, poor sleep, poor appetite and heightened anxiety. The patient's mood and anxiety symptoms interfered with her ability to care for herself. She demonstrated poor insight into her illness. With psychoeducation about her illness, the patient was agreeable to a trial of venlafaxine extended release and agreed to admission to an inpatient eating disorder unit. **Conclusion:** The treatment of DM1 in the setting of an eating disorder is a challenge for psychiatrists, internists and endocrinologists. This can be further complicated by other comorbid psychiatric conditions. This case illustrates complex psychopathology, with depression and anxiety complicating management of diabulimia. We emphasize the importance of diagnosing comorbid psychiatric disorders in patients with diabulimia. Further research is warranted to develop targeted, evidence-based practices to treat this particular subset of patients.

NO. 36

MARCHIAFAVA-BIGNAMI DISEASE (MBD) AND DIFFUSION TENSOR IMAGE (DTI) TRACTOGRAPHY

Lead Author: Priscilla N. Chukwueke, M.D., M.P.H.
Co-Author(s): Anne Kleiman, M.D., Leszek Pisinski, M.D.

SUMMARY:

Marchiafava-Bignami disease (MBD) is a rare central nervous system (CNS) disease characterized by demyelination of the corpus callosum, mostly found in men with alcohol use disorder and malnutrition, with cases reported worldwide across all races. The onset of the disease may be sudden, presenting with stupor, coma or seizures, while some may present with gait abnormality (spasticity), psychiatric problems, hemiparesis, aphasia, apraxia and incontinence with resultant high morbidity and mortality rates. **Case:** The patient is a 30-year-old left-handed African-American man who presented with altered mental status, urinary incontinence, slurred speech and left-sided weakness. The diagnosis of MBD was confirmed with DTI tractography, which showed significantly diminished commissural fibers extending to the right central semiovale lesion and near absent or significantly diminished commissural fibers extending through the corpus callosum, indicating demyelination. **Discussion:** MBD is often an incidental diagnosis with high morbidity and mortality. This is different from previous cases because of earlier onset as opposed to onset around age 45, rapid recovery and minimal disability, as he could walk independently before discharge from the hospital. This case also shows added benefit of DTI tractography in the diagnosis of MBD. **Keywords:** Marchiafava-Bignami Disease (MBD), Demyelination, Central Nervous System, DTI Tractography, Alcohol Use Disorder, Corpus Callosum

NO. 37

WITHDRAWN

NO. 38

LEPTOMENINGEAL CARCINOMATOSIS PRESENTING PRIMARILY AS PSYCHOSIS

Lead Author: Wilson Chung, D.O.
Co-Author(s): Brian Bronson, M.D.

SUMMARY:

Background: Leptomeningeal carcinomatosis results from metastatic spread of various cancers, such as breast and lung, and can present with a multitude of symptoms affecting the central nervous system. However, psychiatry symptomatology, including hallucinations and paranoia, is rare. Here we present a case that appears to be the first case described in English literature in which a woman recently diagnosed with lung adenocarcinoma presented with primary psychiatric complaints and was later found to have leptomeningeal metastastes. **Case:** A 51-year-old, married Caucasian female with a history of anxiety and depression on escitalopram and clonazepam and recently diagnosed with adenocarcinoma of the lung a month prior to her presentation initially presented to the psychiatric emergency room for severe anxiety. Four days later, she returned to the hospital with worsened anxiety and was admitted to the general medical floor when her behavior at home became more disruptive and

her family was unable to care for her. When she was initially evaluated in the emergency room, she was alert, and orientation was grossly intact. During the hospitalization, she was transferred to the hematology/oncology service as her symptoms worsened with severe paranoia. She was noted to be hallucinating, resulting in severe agitation treated with medications and physical restraints. Her family denies she previously presented with these symptoms. On a daily basis, she reported that someone was trying to kill her, bombs were exploding in the hospital and that she was drowning in water. She had difficulty answering questions, as she appeared distressed and repeatedly responded with these delusions and hallucinations. MRI of her head demonstrated leptomeningeal enhancements in the cerebral hemispheres. Neurology believed this contributed to her presentation. Psychiatry was consulted to address the patient's symptoms, and she was tried on numerous antipsychotic medications including aripiprazole, olanzepine and haloperidol, to which she partially responded. Palliative care was also consulted to address goals of care, and the family ultimately pursued hospice care given her extensive disease and severe psychiatric symptoms. **Discussion:** Though a diagnosis of leptomeningeal carcinomatosis is found in about 5% of patients with solid tumors, this is likely underestimated given that many patients are asymptomatic and do not demonstrate neurological sequelae. Leptomeningeal metastasis can be diagnosed with radiologic imaging or with examination of cerebral spinal fluid. Though depending on which region of the brain is affected by malignant cells, a presentation of psychosis such as paranoia and hallucinations without other neurological symptoms has never been reported as a primary manifestation of leptomeningeal metastases. This is the first case in English literature to demonstrate psychiatric symptoms as the main presentation in a patient found to have leptomeningeal metastases.

NO. 39

A CASE REPORT OF NAMENDA (MEMANTINE) USE IN ADHD

Lead Author: Omar A. Colon, M.D.
Co-Author(s): Doda, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Memantine is a noncompetitive NMDA open channel receptor antagonist. Memantine blocks the activation of NMDA receptors, thereby preventing overstimulation by glutamate. Memantine has been used for Alzheimer's disease and is currently being studied for many psychiatric conditions such as major depression, bipolar disorders, attention deficit and hyperactivity disorder (ADHD), autism spectrum disorder (ASD), and obsessive-compulsive disorder (OCD). **Objective:** To evaluate the use of Namenda (memantine) as a treatment option to reduce symptoms of ADHD. **Methods:** We searched PubMed for articles using keywords "Memantine," "ADHD," "Namenda" and "Psychiatric Uses." **Case:** Here is a case of a 28-year-old male restaurant manager with a history of mood disorder NOS, ADHD inattentive type, and cocaine and opioid abuse, presenting with complaints of inability to focus, forgetfulness and poor concentration for the past several months, which had been affecting his work. He had difficulties reporting to work on time, and very frequently, he missed the deadlines to submit business reports. The patient was on quetiapine and had been taking methylphenidate and atomoxetine with a poor response for ADHD, which was diagnosed in childhood. He also had a history of intermittent cocaine and opioid abuse since he was 17, but had been clean for the last two years. The patient was put on to Namenda (memantine) at 5mg orally, twice daily for two weeks, after which he showed moderate improvement in his concentration. After two weeks, we titrated the dose to 10mg orally, twice daily. The ADHD symptoms improved quickly, with minimal symptoms remaining at the follow-up visit. **Conclusion:** Memantine is a safe drug with no major side effects and fewer drug interactions. During open-label and pilot studies, memantine has proved to be useful in improving ADHD symptoms. Although Namenda was proven to improve symptoms of ADHD in this patient, due to limited evidence, there are not enough studies to support its use for ADHD as a monotherapy or as an adjunctive treatment at this moment. More studies are needed to demonstrate its efficacy and safety in ADHD and other psychiatric disorders.

NO. 40

"SCARY THOUGHTS" AND PREGNANCY: A CASE SERIES AND LITERATURE REVIEW

Lead Author: Shalini D. Dave, D.O.
Co-Author(s): Sarah Noble, D.O.

SUMMARY:

Background: Mood disturbance during the perinatal period affects up to one in five women. "Scary

thoughts" are intrusive negative thoughts experienced by these women. In this report, we present three patients who developed "scary thoughts" during or after pregnancy and discuss the distinction in management. **Case:** First, A.B. is a 22-weeks pregnant 20-year-old female who presented with thoughts of hurting herself and others and ruminated about these thoughts. She denied any desire to follow through with her thoughts and felt they were "disgusting." She was started on escitalopram and referred for therapy. Second, S.P. is a 27-year-old female three months postpartum who reported having an image of her son drowning as she was bathing him and an image of someone breaking his hands. She was started on sertraline and referred for therapy. Finally, K.D. is a 31-year-old female with psychotic depression following the birth of her son. She was treated with escitalopram, risperidone and alprazolam. **Methods:** A retrospective review of the patients' charts was completed, and a PubMed search using the keywords postpartum, OCD, depression, psychosis and pregnancy was conducted. **Discussion:** Women with obsessive-compulsive disorder (OCD) often exhibit intrusive thoughts or images, i.e., obsessions, and these often include thoughts of harming the fetus or child. These intrusive thoughts have also been reported by over 40% of women with postpartum depression. Postpartum psychosis, however, is more severe and occurs in one – two out of 1,000 postpartum women. Symptoms occur early after birth and include mood change and psychosis such as hallucinations, delusions and disorganized thought processes. The theme of these thoughts is typically to kill the baby or denial of the birth. As both of these involve thoughts of harming the infant, it is crucial to differentiate between the two for treatment. Patients with postpartum depression and obsessive thoughts are often ego-dystonic, as they are scared and disturbed by the thoughts, which provoke anxiety in them. These mothers may even avoid objects of harm. Patients with postpartum psychosis, however, are ego-syntonic and do not exhibit the same level of concern. **Conclusion:** It is important for physicians to be cognizant of "scary thoughts" in postpartum depression and when these thoughts can be more concerning for postpartum psychosis. Women should be in an environment where they feel comfortable to discuss these thoughts, and awareness of these disorders is vital to ensure patients receive proper treatment.

NO. 41

OBSERVED DIFFERENCE BETWEEN INTRAMUSCULAR AND ORAL LORAZEPAM FOR TREATMENT OF CATATONIA: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Andrew Davidowitz, M.S.
Co-Author(s): Katherine Jong, B.A., Amjad Hindi, M.D.

SUMMARY:
Background: The symptomatology of catatonia is characterized by motor immobility, negativism, echolalia/echopraxia, rigid posturing, mutism, stereotypy and atypical movements. The first publications addressing the treatment of catatonia with benzodiazepines come from case reports that date back to 1983, with the first clinical trial taking place in 1989. Since then, benzodiazepines such as lorazepam have become first-line therapy, with immediate resolution often achieved at low and single doses of the medication. **Case:** Our patient was a 56-year-old woman with persistent catatonia during a hospitalization for acute mania in the context of rapid cycling bipolar disorder, with symptoms of minimal and unintelligible speech with echolalia, negativism, and stereotypy with a rigid posture and grimacing. In this state, the patient was unable to initiate self-care and was refusing food and water as well as oral medications. We observed that even at identical doses of 2mg, the patient's catatonic state would respond much more dramatically to intramuscular rather than oral lorazepam. After intramuscular lorazepam, our patient began verbalizing her negativism in a pressured manner using comprehensible words. Her rigidity and grimacing resolved completely, allowing her to ambulate with minimal assistance, but the stereotypy often remained. The effect lasted approximately six hours, at which time, oral lorazepam was given with little, if any, improvement noted in symptoms. After the oral dose, a dose of intramuscular lorazepam was administered, and a similar response to the first intramuscular dose was observed. This pattern of response repeated itself several times over the patient's hospital course. **Discussion:** A literature review was performed using PubMed to see what existing studies were available that might corroborate our observations in this patient. Several studies have been published demonstrating no observable differences between oral and intramuscular lorazepam with respect to bioavailability, elimination or absorption half-life, or time to peak plasma level. A few studies have indicated that elderly patients may have a smaller

volume of distribution; however, it is compensated for by a reduced total clearance, leading to similar elimination half-lives. Further, several studies continue to successfully employ lorazepam in elderly patients when treating catatonia. While it remains unclear what the mechanism behind the observed effect might be given equivalent dosing and pharmacokinetics, we have noted this effect to be present in multiple patients. Many clinicians who were approached about this phenomenon claimed to have noticed similar experiences during their careers. In many states, there are legal barriers toward administering intramuscular medications on an inpatient psychiatric unit in a nonviolent patient, which may be an obstacle in the treatment of catatonia in certain patients.

NO. 42

REEMERGENCE OF ADULT ONSET PICA: A NEW PRESENTATION OF AN OLD PROBLEM

Lead Author: Deepak M. Davidson, M.D.
Co-Author(s): Almari Ginory, D.O.

SUMMARY:

Background: The word “pica” is derived from the Latin word for magpie, a bird with a reputation for eating practically anything. The DSM-V defines pica as persistent eating of non-nutritive substances for at least one month that is inappropriate to developmental level and not part of a culturally supported or socially normative practice. We present a case of pica caused by anemia in a patient with a previous history of pica caused by malnutrition. **Case:** The patient is a 33-year-old female with a history of morbid obesity, recurrent anemia and pica with craving and ingestion of mattress toppers who was admitted for severe anemia (Hg 5.9) with GI bleed. Psychiatry was consulted to evaluate for comorbid psychiatric conditions in light of pica with ingestion of 20 foam mattress pads in the previous two years. The patient reported buying foam and pillows for consumption due to craving for the foam cushioning. She expressed a desire to stop eating the foam but was unable to stop. She reported feeling depressed and anxious on and off for years. She reported that, in childhood, she had a history of eating mattress pads for a couple of years and then stopped. She thinks it may have been related to malnutrition. Two years ago, she remembered feeling comforted by eating these pads and had an intense craving to go buy one at the store. She reports that, since then, she buys about one monthly and eats it over the course of about two weeks. She likes the taste and simply has “the urge to eat it." Two or three weeks prior to admission, she began chewing on bites of the foam pads and then spitting them out. She reports she no longer has the urge to ingest it. She shares that she has a lot of past trauma with physical, emotional and sexual abuse in childhood and that she showers six times daily to feel “clean." She denies intrusive thoughts prior to the shower, stating she simply has urges to shower for the relief of feeling clean afterward. She reports racing thoughts about problems with the world and worries of people disliking her. She also shares that she used to have problems with impulsive, aggressive behavior and still gets very irritable. Aripiprazole helped her with this in the past. The patient was treated with four units of PRBCs and was started on aripiprazole 5mg to help with mood and referred for outpatient follow up. **Conclusion:** Pica is observed most commonly in areas of low socioeconomic status and is more common in women (especially pregnant women) and in children. Numerous complications of the disorder have been described, including iron-deficiency anemia, lead poisoning and malnutrition. Pica is probably a behavior pattern driven by multiple factors. Some recent evidence supports including pica with the obsessive-compulsive spectrum of disorders. Many different treatment regimens have been described, with variable responses. It is important to be aware of this common, but commonly missed, condition.

NO. 43

VISUALIZING PHARMACODYNAMIC INTERACTIONS: PRN MEDICATIONS CAN BE A WINDOW TO DRUG INTERACTIONS

Lead Author: Arashinder Dhaliwal, M.D.
Co-Author(s): Ahmad Arain, M.B., B.S., Srinath Gopinath, M.B., B.S., Roxanne McMorris, M.D., Ammar El Sara, M.B., Ch.B., Richard H. McCarthy, M.D.

SUMMARY:

The Pharmacy Service and Clinical Knowledge Enhancement System project, PSYCKES, is a web-based portfolio of tools designed to support quality improvement and clinic decision making in the New York State Medicaid population. Typically, PSYCKES offers a broad overview of a patient’s pharmacological treatment, the medications prescribed, the doses offered, and the length and adequacy of medication trials. This data is organized such that one may obtain a broad overview of a

patient's treatment. At Kingsboro Psychiatric Center (KPC), we have developed methods that permit us to analyze a patient's medication treatment and response in a comprehensive manner. An excel database was created in which information was sorted and labeled based on each medication and duration of medication use. The data were arranged to provide information regarding polypharmacy, such as augmenting and combination strategies. Finally, medications were displayed in temporal sequence while indicating duration of use. The focus of this report is based on a patient's need for and use of PRN medication. At KPC, PRN medications can't be entered as standing orders. Thus, PRN medication use is an indirect measure of patient medication response. Increased use of PRN medication could be due to various factors. The factors highlighted in this case report are pharmacokinetic interactions, which cause exacerbation of psychotic symptoms. We stress the need to gather a detailed medication history and response, which would help in improving patient outcomes and using medications judiciously. We present a psychopharmacological chart review of a patient diagnosed with schizoaffective disorder and admitted to KPC. He was started on a second-generation antipsychotic (SGA), but due to inadequate response, aripiprazole was added to his pharmacotherapy regimen as an augmenting agent. Following this, the patient developed increasing agitation, which was indirectly measured by increased use of PRN medications, including lorazepam. We hypothesized that the increased agitation was a manifestation of the interaction between a full agonist SGA and a partial agonist, in this case, aripiprazole. It is well known that in the presence of a full agonist, a partial agonist acts as an antagonist, thus worsening psychotic symptoms. Based on this hypothesis, we discontinued aripiprazole, and the patient significantly improved, as seen by decreased use of PRNs compared to the previous baseline. The above case illustrates the importance of investigating psychopharmacological data in facilitating judicious medication management and improving patient outcomes.

NO. 44

ANTI-N-METHYL-D-ASPARATE RECEPTOR ENCEPHALITIS PRESENTING AS AN EMERGING CULPRIT FOR CONVERSION DISORDER: AN ADOLESCENT CASE REPORT

Lead Author: Swati Divakarla, M.D.
Co-Author(s): Nadine Schwartz, M.D.

SUMMARY:
Anti-N-methyl-D-asparate (NMDA) receptor encephalitis has been increasingly diagnosed in the pediatric population. Many patients with this illness are characterized with a wide range of neuropsychiatric symptoms, including depression, behavior changes, psychotic symptoms, mutism, stereotypical behavior, dystonia, verbal reduction and seizures. These cognitive and behavioral deficits can be challenging to manage, and delayed treatment may result in long-term sequelae, such as movement disorders. We report on a 14-year-old girl who initially presented to the ER with a new-onset seizure and gradually developed bizarre behavior, paranoia, selective mutism, anomia and prosopagnosia. Her initial diagnostic work-up, including a head CT, MRI, MRA and basic CSF studies, was unrevealing, resulting in a provisional diagnosis of conversion disorder. As her symptoms progressed, in an attempt to further explore potential organic causes, lumbar puncture was repeated, and anti-NMDA receptor antibodies returned positive. Therefore, a diagnosis of anti-NMDA receptor encephalitis was made. Subsequently, she was treated with IVIG with a positive effect on her neuropsychiatric symptoms. This case report aims to raise awareness of the association between neuropsychiatric symptoms and anti-NMDA receptor encephalitis in the psychosomatic field.

NO. 45

A RARE CASE OF WRIST FRACTURE RESULTING FROM ELECTROCONVULSIVE THERAPY: A CASE REPORT

Lead Author: Erin Dooley, M.D.
Co-Author(s): Surbhi Khanna, M.B.B.S.

SUMMARY:
Background: Bone injury due to electroconvulsive therapy (ECT) has been thought to be rare. Case reports indicate that fractures are a risk of ECT. This occurs most often with the "cuff method," in which a blood pressure cuff is inflated above systolic pressure before administration of succinylcholine to demonstrate unmodified motor activity in the limb. Additionally, fractures of the hip and acetabulum have been identified in patients with osteoporosis. However, there is limited documentation of fractures in patients without osteoporosis and without the implication of a blood pressure cuff. This poster presents a case of this anomaly. **Case:** The

patient is a 56-year-old White female with a history of bipolar I disorder, PTSD and borderline personality disorder, numerous hospitalizations, and a past medical history significant for GERD, HLD and Factor V Leiden mutation who was admitted to the inpatient psychiatric unit at UVA for a depressive episode. Medications included aripiprazole 30mg, oxcarbazepine 300mg BID, clonazepam 2mg, risperidone 2mg and trazodone 200mg. The patient had demonstrated benefit from multiple courses of ECT in the past. Specifically, she had received at least 45 treatments over 10 or more years. On hospital day eight during treatment three with bifrontal ECT at 25% energy with 50mg succinylcholine, 80mg methohexitol, 30mg ketorolac and 10mg labetalol, a loud, audible "click" was heard immediately post-treatment. Shortly thereafter, the patient's right wrist began to swell, and she reported pain in the posterior wrist and limited movement in the right index finger and thumb. Upon imaging in the PACU, it was noted that she had sustained a volarly displaced distal radius fracture with distal radioulnar joint involvement and a nondisplaced ulnar styloid fracture. Manual reduction was attempted twice unsuccessfully, and the patient ultimately required an ORIF. Afterward, she was diagnosed with previously unknown osteopenia by DEXA scan. Surgical correction was successful, and the patient was able to continue ECT treatments six days postop. It is important to note that during ECT, the usual BP monitoring cuff was on the opposite limb, demonstrating that this was not a case of a cuff having been coincidentally inflated for BP monitoring as the succinylcholine was circulating. **Discussion:** Few similar cases have been reported. It was quite unusual that someone undergoing ECT identical to so many prior treatments with the exact same doses of paralytic and sedative could suffer from wrist fracture with a previously unknown diagnosis of osteopenia without osteoporosis. It is conceivable that the succinylcholine may not be delivered appropriately to a limb undergoing a chance monitoring of BP, but this is not the case here. Chronic use of SSRIs and antipsychotics may result in osteoporosis or simply osteopenia in this case. This indicates that close monitoring of an otherwise healthy patient is important to avoid similar injury.

NO. 46

VISUALIZATION OF MEDICATION RESPONSE IN THE LONG-TERM INSTITUTIONALIZED MENTALLY ILL UTILIZING PSYCKES DATA

Lead Author: Ammar El Sara, M.D.
Co-Author(s): Ahmed Arain, M.B.B.S., Srinath Gopinath, M.B.B.S., Richard H. McCarthy, M.D.

SUMMARY:
The Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES) is an extensive database of all Medicaid claims generated by New York State's (NYS's) 26 adult, child and forensic state psychiatric inpatient facilities. PSYCKES has been maintained by the New York State Office of Mental Health since 1989. Using NYS Medicaid claims, PSYCKES generates clinical and administrative quality indicators, which are then used to support quality improvement and clinical decision making. On a population-wide level, PSYCKES data has been useful in reducing psychotropic polypharmacy and other clinically questionable psychotropic prescribing practices, as well as in assessing treatment outcomes across different geographic and institutional domains. PSYCKES data is also used to red-flag individual patients for more intensive clinical review. On an individual clinician level, the PSYCKES web-based tools are rather difficult to navigate and do not easily lend themselves to clinical decision making, despite being a trove of clinical data. Our group at the Kingsboro Psychiatric Center (a state psychiatric facility in Brooklyn, NY) has been working on enhancing the usability of PSYCKES data for front-line clinicians, with specific focus on extensive medication histories. We have developed a process in which medication histories of individual patients are isolated, processed and then visually represented in a timeline form. Medications can be color-coded according to their class, side effect profile, and pharmacodynamic and/or pharmacokinetic interaction potential. The use of "as needed," or PRN, medications can also be similarly tracked on a separate timeline and then used as a proxy measure of the change in a patient's clinical status over time. When combined, the PRN timeline can highlight medication regimens that could have been particularly helpful/unhelpful in the past. This is then followed by a closer examination of such regimens, informing future treatment decisions. This process of data isolation, processing and visual representation has been designed to be simple, fast and user-friendly. Our experience at KPC has confirmed that our process is clinically useful, especially in time-limited clinical consultation settings. In addition, our process has been a helpful and interactive psychopharmacology teaching aid. We plan to test the utility of our process beyond

state hospitals, especially after the NY statewide implementation of electronic prescribing.

NO. 47

PSYCHIATRIC COMORBIDITIES WITH CHARGE SYNDROME: A CASE REPORT

Lead Author: Rasha Elkady, M.D.
Co-Author(s): Balkozar Adam, M.D.

SUMMARY:

Background: CHARGE syndrome is an autosomal dominant syndrome that is caused by mutation in chromodomain helicase DNA binding protein. The acronym CHARGE stands for coloboma, heart defects, choanal atresia, retardation of growth or development, genitourinary malformation, ear abnormalities. It can occur as a denovo mutation with no family history in 97% of cases or familial in 2 – 3% of cases. Literature review revealed that the most commonly occurring behavioral symptoms of CHARGE syndrome are autistic-like behaviors, social withdrawal, communication, language impairment, anxiety, OCD symptoms, repetitive behavior, insomnia, ADHD, tic disorder, cognitive impairment, and PTSD due to pain and multiple surgeries. One study suggested the presence of regulatory disorder, making it difficult for children to regulate complex processing such as sleep-wake cycles, hunger-satiety cycles and ability to calm oneself. **Case:** Mr. X. is an eight-year-old Caucasian boy diagnosed with CHARGE syndrome who presented for a psychiatric evaluation. He had a family history of CHARGE syndrome. His biological mother has CHARGE syndrome, bipolar affective disorder, hearing loss and blindness. His 14-year-old sister also has CHARGE syndrome, hearing impairment, congenital heart disease, generalized anxiety disorder and depressive disorder NOS. Mr. X. presented with anger outbursts; he was acting out, especially when he was frustrated or anxious. He was diagnosed with anxiety disorder NOS and mood disorder NOS. He was started on fluoxetine 10mg by mouth every morning, which was later augmented with risperidone 0.25mg by mouth twice a day. His anger and mood have improved on these medications. **Discussion:** A typical child with CHARGE syndrome has visual impairment, hearing impairment, swallowing difficulties, smell impairment, has been labeled developmentally delayed or mentally retarded, has been admitted to hospitals several times, and has had multiple surgeries. Helmath et al. conducted a cohort study on 19 patients with CHARGE syndrome. Ninety percent of them had an average of four surgeries and were underweight due to feeding problems. Our patient, Mr. X., has one kidney, had testicular surgery and eye and ear surgery, had his tonsils and adenoids removed, and had his esophagus reconstructed. He had undergone speech, occupational and physical therapy. The survival rate of children with CHARGE syndrome is 70% for the first five years of life. The highest mortality is in the first year of life. **Conclusion:** Physical phenotypes of CHARGE syndrome have been well established. Behavioral phenotypes have been proposed. There is very limited data regarding psychiatric comorbidities with CHARGE syndrome. This case report brings to light the need for further research in this area and the importance of early identification, intervention and management of psychiatric comorbidities with this unique patient population.

NO. 48

REFRACTORY PSYCHOSIS IN A PATIENT WITH MEGA CISTERNA MAGNA

Lead Author: Narissa R. Etwaroo
Co-Author(s): Astik Joshi, M.D., Rita Yanez Horton, M.D., Donard Dwyer, Ph.D.

SUMMARY:

Background: This is the case of a Hispanic female with a past psychiatric history of treatment-resistant psychosis and prior suicidal attempt that presented to the hospital with auditory hallucinations and suicidal ideations. Throughout hospitalization, the patient continued to be psychotic in spite of treatment with antipsychotics, antidepressants and inpatient milieu therapy. Interestingly, while her symptoms did not ameliorate in response to medications, she did develop side effects associated with the drugs given. Analysis of serum levels olanzapine showed a supra therapeutic level. This concluded that her ongoing psychosis was not due to noncompliance with treatment or ineffective levels of medication. On further workup for treatment-resistant psychosis, she was found to have Mega Cisterna Magna on her MRI brain, revealing possible association between neuroanatomical defects and refractory psychosis. This patient was also found to have Vitamin D insufficiency, which is hypothesized to be neuroprotective and may play an additive role in her deficit and treatment refractoriness. Mega Cisterna Magna refers to significantly enlarged CSF retro-cerebellar cisterns in the posterior fossa with normal cerebellar morphology. It is a variant of Dandy-Walker Malformation, which needs to be

further studied to determine if it is a normal variant or has clinical significance in neurological as well as psychiatric illness. **Discussion:** To our knowledge, this is the only case report that links refractory psychosis with Mega Cisterna Magna and Vitamin D insufficiency. Mega Cisterna Magna has previously been associated with schizophrenia and bipolar disorder. This brain abnormality may contribute to disturbances in the cortico-cerebellar-thalamic-cortical pathway associated with cognitive dysmetria. The neuroanatomical defect mega cisterna magna may explain the cognitive dysfunction observed in our patient and provided an organic basis for her lack of response to treatment. The patient was also found to have Vitamin D insufficiency, which could exacerbate degenerative or functional decline in the brain due to a decrease in its neuroprotective properties. Neuroimaging and Vitamin D levels need to be looked at, as they could account for the treatment refractoriness.

NO. 49

THE CASE OF A "QUEER HETEROSEXUAL": EXPLORING THE CONCEPT OF "MOSTLY HETEROSEXUALS" AND THEIR UNIQUE EXPERIENCES OF MENTAL ILLNESS

Lead Author: Alec Faggen
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SUMMARY:

Background: In the last decade, a new category of sexual identity has been elucidated: the "mostly heterosexuals" (MHs). MHs outnumber gays and bisexuals, but are often overlooked. They generally self-identify as heterosexuals, despite a mental health risk profile that more strongly correlates with bisexuals. Here, we present the case of a self-identified MH male with schizophrenia. His case illustrates a complex treatment, including a paranoid reaction to male providers and strong affiliation toward female ones. It also demonstrates the need for increased research into an overlooked but high-risk population. **Case:** Mr. A. is a 28-year-old homeless African-American male who self-presented with depressed mood, suicidal ideation and paranoia. Despite a difficult childhood involving parental abuse and neglect, bullying, forced displacements, child welfare involvement, and homelessness, Mr. A. excelled academically and in the theater arts. He completed high school and two years at a prestigious drama school until he was expelled, apparently for failure to meet expectations. Over the next four years, Mr. A. became homeless, socially isolated and severely depressed, with debilitating paranoid persecutory delusions. On admission to the inpatient unit, Mr. A. displayed preoccupation with sexuality and identified himself as a "queer heterosexual: a person who has sex with males and females, but prefers females." He also revealed that two of his four male partners were older men who pressured him into sexual encounters. During therapy with male providers, the patient refused to engage meaningfully. In contrast, with female providers he was more reactive and would openly share his delusional systems and traumatic life experiences. The patient was diagnosed with schizophrenia treated with olanzapine and bupropion to good effect. During his hospital course, providers grew increasingly mindful of his preferences, and he in turn demonstrated increasing insight into his gender-based behavior, in time exploring his gender difficulties with providers of both genders in a more balanced way. **Discussion:** A review of the mental health profile of MHs compared to heterosexuals found an increased incidence of psychoticism, suicidality, sexual risk taking, substance use and victimization. This research correlates well with Mr. A.'s history. The risk profile has clinical relevance to the therapeutic alliance and prognosis. Mr. A.'s clinical behavior was influenced by his sexual identity. Close attention to gender of treatment team members, and discussion of this in the psychotherapy, was fruitful in helping the patient explore his identity and resolve some of his paranoia, depression and suicidal ideation. Further research into the mostly heterosexual population should prompt guidance for psychotherapeutic work, as well as screening tools for risk stratification and prognosis.

NO. 50

ABSENT SEPTUM PELLUCIDUM AND GRAY MATTER HETEROPIA IN A PATIENT WITH MDD WITH PSYCHOTIC FEATURES AND INTRACTABLE EPILEPTIC SEIZURES: A CASE REPORT

Lead Author: Mobeen Farooq
Co-Author(s): Dr. Kelly E. Melvin, M.D.

SUMMARY:

The septum pellucidum (SP) is a fine, membranous midline structure located inferior to the corpus callosum and anterior and superior to the fornix. Due to its unique position, SP developmental abnormalities have a more general effect on the

overall formation and function of the brain and, in particular, the limbic system. Previous reports have already highlighted some of the variations occurring during the formation of the SP. These include an isolated agenesis of the SP, malformations of the SP with other midline structural aberrations and, more frequently, the persistence of a potential space between the SP leaflets known as the cavum septum pellucidum (CSP). Two very important features have been recognized in patients with abnormalities in the SP: 1) Defects in the septum pellucidum usually occur with other brain malformations and, more significantly, 2) variations in the septum pellucidum occur more frequently in patients with psychotic disorders such as schizophrenia. This case report describes a female with an absent septum pellucidum who presented with a history of depression and more recent onset of psychotic features in the form of auditory hallucinations. Previous MRI studies also revealed gray matter heterotopia believed to be the cause of the patient's long history of intractable epileptic seizures. A trial of a different antipsychotic medication provided adequate control of her psychotic symptoms, although her seizures remained intractable. An extensive review of literature looking at psychotic features, possibly in combination with mood disorders, manifesting in individuals with septum pellucidum agenesis and further case details are discussed.

NO. 51

IMPROVEMENT OF CATATONIA AFTER CARDIAC ARREST

Poster Presenter:Michael S. Peroski, D.O.
Lead Author: Marissa Flaherty, M.D.

SUMMARY:

A 69-year-old Caucasian female with bipolar disorder with psychotic features was directly admitted to a geriatric psychiatry unit from her nursing home for management of her psychotic symptoms, including refusal of most PO intake for three weeks. Her hospital course was complicated by immediate transfer to a primary medical service for hypertensive urgency. She subsequently developed delirium, malnutrition secondary to continued refusal of PO intake requiring placement of an NG tube, aspiration pneumonia, placement of a PEG tube and cardiac arrest. Psychiatry was consulted to make recommendations to manage the patient's psychosis. She was noted to display several symptoms consistent with a diagnosis of catatonia. Given the patient's complex course and lack of response to medications, ECT was considered as a potential option. The patient had a cardiac arrest prior to having her PEG tube placed. After her cardiac arrest, the patient noted improvement in her catatonic symptoms for the first time since her admission. This raised the question of the etiology of the improvement without the change in medications. This patient had a marked improvement in her catatonic symptoms after a cardiac arrest, raising a question about the impact that the mechanism of action of hyperperfusion to the brain (via medications and chest compressions during a code) has on catatonia. Studies have shown that during ECT—a standard treatment modality for catatonia—and generalized seizures, there is often increased cerebral blood flow. It has been hypothesized that the increased cerebral blood flow to the anterior cingulate, medial frontal cortex and thalamus is responsible for resolution of depressive symptoms in depressed patients being treated with ECT. There is less research regarding the effect that the changes in blood flow have on symptoms of catatonia. This case serves as a platform for discussion about the role that this may play in catatonia and future directions for treatment of catatonia.

NO. 52

INTENTIONAL INGESTION: A CASE SERIES REGARDING SWALLOWING OF FOREIGN OBJECTS: TREATMENT ALTERNATIVES

Lead Author: Suhey G. Franco Cadet, M.D.
Co-Author(s): Lara Addesso, M.D., Romil Sareen, M.D., Saad Ferdous Ahmed, M.D., Asgar Hossain, M.D.

SUMMARY:

Intentional foreign body ingestion (FBI) is an act in which the psychiatric patient repeatedly ingests foreign objects without giving any thought to the consequences this might bring about. The act is habitually driven by impulse, is repetitive and refractory to medical treatment, and frequently necessitates multiple medical interventions. Deliberate swallowing of foreign objects has been reported in various surgical papers, yet reporting in psychiatric literature is sparse. Some of the hypothesized reasons for psychotic patients to take part in the act include oral exploration, suicidal intent, self-mutilation, masochism, hallucinations, bizarre delusions, oral-impregnation fantasies and factitious disorder. While some studies show

recurrent FBI attempts mainly in the psychiatric patient population, there are others that show a strong association in patients with comorbid psychiatric illnesses. One study conducted on prisoners found that 14 out of 19 patients intentionally swallowed foreign bodies while imprisoned, which led to their hospitalization. The remaining patients ingested objects while in the psychiatric prison ward (due to reporting suicidal ideation). All of the patients swallowed one or more sharp objects such as razorblades, glass, toothbrushes, pencils, radio antennae and a checker. The motive most often reported for swallowing was suicidal ideation with command hallucinations. The treatment for deliberate foreign body ingestion places a huge burden on hospital resources and is often times extremely costly. The most common diagnostic and therapeutic modality used after an ingestion is an endoscopy, which is relatively safe and effective but an expensive procedure. Further research and attention should be aimed at preventing these recurrent, dangerous and costly episodes. **Objective:** We studied a series of cases with the objective of understanding the reason behind intentional FBI in the psychiatric population and tried to formulate plans to better treat the current episode and prevent further occurrence. **Case:** The two cases that we investigated had concomitant psychiatric illnesses. Both of the patients were adult females (22 years old and 35 years old) of Caucasian background with moderately long psychiatric histories including multiple inpatient hospitalizations, multiple previous suicidal attempts, recurrent history of intentional FBI, psychosis with auditory hallucinations (commanding type) and absence of substance abuse. In both these patients, the foreign body was removed endoscopically without residual damage. Both of the patients received a diagnosis of schizoaffective disorder, bipolar type. Both of the cases improved on treatment with multiple psychotropics (multiple antipsychotics and mood stabilizers) and supportive/milieu therapy, as evidenced by a lack of suicidal ideas, command type auditory hallucinations and delusions and improvement of mood, affect, impulse control, insight and judgment.

NO. 53

SLEEP STATE MISPERCEPTION OR SUBJECTIVE INSOMNIA IN PATIENTS WITH DEPRESSION AND ANXIETY: A CASE REPORT

Lead Author: Suhey G. Franco Cadet, M.D.

Co-Author(s): Fatima Iqbal, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Depression is considered the most common psychiatric illness and is associated with marked disability around the globe. In the U.S. alone, seven to nine percent of adults experience a major depressive episode each year, and an estimated eight million (3.4%) meet criteria for MDD. Left untreated, it can lead to significant impairment in social and occupational functioning of the individual, accounting for over 60% of the total economic burden and twice as much incurrence of medical costs. Insomnia, a common sleep disorder, is a concern for people with depression and anxiety, yet this highly prevalent chronic condition remains poorly understood. Sleep state misperception, a subtype of insomnia, is among the most intriguing but challenging to understand and manage clinically. Although it is possible that multiple factors may influence sleep state perception, there seems to be a very close relationship between anxiety, MDD and chronic insomnia. The aim of our case report was to delineate effective treatment modalities that primarily aim to decrease subjective insomnia or sleep state misperception in patients suffering from MDD and anxiety with normal sleep duration. **Case:** We report a case of a 38-year-old Hispanic female, single, with a past psychiatric history of major depressive disorder and anxiety with multiple inpatient psychiatric hospitalizations currently being followed in BRMC outpatient clinic with reported compliance to treatment and follow-up. The patient's chief complaint now was early and middle insomnia for the past two weeks, despite normal sleep hygiene as endorsed by family members and friends. The patient denied any current mood or psychotic symptoms and was demanding more medications to treat her current problem despite being on adequate pharmacotherapy that included hydroxyzine, quetiapine, bupropion and trazodone. **Discussion:** After conducting an extensive literature review, we concluded that sleep state misperception or subjective insomnia is a prevalent illness in many primary and chronic insomniacs with objectively measured normal sleep duration. It frequently leads to and is associated with worsening of depression, anxiety and poor coping resources. Current pharmacological treatment strategies directed at treating this condition lack validity and clinical utility. From our literature review and findings from our case report, we propose augmentation modalities

that aim to decrease sleep state misperception, such as cognitive behavioral therapies, sleep scheduling, and behavioral and emotional regulation techniques that can prove to useful in the management of this condition. Further research is still needed to elucidate the effectiveness of these modalities in the treatment of such cases.

NO. 54

THE ROLE OF AMANTADINE WITHDRAWAL IN TREATMENT-REFRACTORY ALTERED MENTAL STATUS

Lead Author: Leah D. Fryml, M.D.
Co-Author(s): Leah Nunez, M.S., Kristen Williams, M.D.

SUMMARY:
Amantadine withdrawal is a known but under-recognized cause of altered mental status (AMS).The abrupt discontinuation of amantadine, an antiviral medication that functions as a dopamine agonist in the central nervous system, has resulted in a profound delirium that in some cases has progressed to neuroleptic malignant syndrome (NMS). Our educational objective for this poster is to aid clinicians in the recognition of amantadine withdrawal as one potential cause for treatment-refractory AMS. We present two medically complex patients, both with AMS likely multifactorial in origin but that only resolved with the correction of amantadine withdrawal. **Case:** A 57-year-old male with bipolar disorder and multiple medical comorbidities presented with tremulousness, hypoglycemia, tachycardia, fever and AMS. He was found to have lithium toxicity. Despite adequate treatment of presenting metabolic derangements, AMS persisted for several days until acute respiratory distress necessitated intubation and transfer to the ICU. On ICU day 14, psychiatry was consulted. Noting the patient's bilateral upper extremity rigidity, we suspected an NMS-like syndrome secondary to amantadine withdrawal (the patient had received no neuroleptics during his hospital stay). Amantadine was restarted, and within 24 hours, the patient's mental and respiratory status had improved. Within 72 hours, he was extubated, stabilized briefly on the general medical ward, and discharged home at his cognitive baseline. A 64-year-old male with Parkinson's dementia (PD) presented for electro-convulsive therapy (ECT) treatment for his severe depression. During the acute course of ECT, his outpatient PD medications were held to minimize the risk of dopamine toxicity. The patient's excellent response to treatment was cut short when, after the fourth ECT, he developed extreme aggression, altered sensorium, and visual and tactile hallucinations. Extensive medical workup failed to reveal any additional cause for the persisting AMS. After two weeks without improvement, the patient's outpatient amantadine was restarted due to concerns for amantadine withdrawal. Within 24 hours, his AMS had dramatically improved. Within three days, he had returned to his cognitive baseline and was stable for discharge.

NO. 55

RECURRENT PRIAPISM ASSOCIATED WITH OLANZAPINE TREATMENT: CASE REPORT

Lead Author: Emily Fu, M.D.
Co-Author(s): Jessica G. Kovach, M.D., William R. Dubin, M.D.

SUMMARY:
Background: Priapism is a prolonged state of penile erection not related to sexual stimulation. It is an emergency that, if left untreated, may result in permanent consequences such as impotence, urinary retention and gangrene. Causes of priapism vary from trauma to illicit drugs and pharmacotherapy. We present a case of priapism in a patient taking fluphenazine, which continued despite switching to olanzapine. **Case:** A 55-year-old African-American man with a history of schizophrenia was admitted to the acute inpatient psychiatric unit for bizarre behavior, disorganization, increased paranoia and violence toward others. The patient developed priapism while taking fluphenazine, which then continued to recur despite a medication change to olanzapine and pharmacotherapy with pseudoephedrine and bicalutamide. Ultimately, a Winter's shunt was performed without complications and prevented recurrence. **Methods:** The literature addressing differential and treatment of antipsychotic-associated priapism is reviewed. **Discussion:** Priapism can be classified in two subtypes: low-flow and high-flow priapism. Stuttering priapism is also termed intermittent or recurrent priapism, which can lead to ischemic damage to the corporal tissue. Sickle cell disease is associated with 35 – 89% of stuttering priapism cases. More than half of priapism cases are related to medications, especially antipsychotics. The exact mechanism of priapism associated with antipsychotic use is multifactorial. The most likely proposed mechanism is related to

alpha-adrenergic blockade mediated by the alpha-receptors located in the corpora cavernosa of the penis. Ziprasidone and risperidone have the highest alpha-receptor affinity, and olanzapine has the least. Fluphenazine and olanzapine undoubtedly contributed to our patient's priapism, but underlying factors such as sickle cell trait and prior injury likely complicated his course and made his priapism more difficult to prevent in the context of a severe, life-long illness, which necessitated treatment with antipsychotic medication. **Conclusion:** Priapism is a potential medical emergency, which is often multifactorial but can be caused by antipsychotics.

NO. 56
WITHDRAWN

NO. 57
"DO NO HARM": ETHICAL IMPLICATIONS OF TREATING PSYCHOSIS IN TWO PATIENTS WITH DELUSIONAL DENIAL OF INSULIN-DEPENDENT DIABETES MELLITUS (IDDM)
Lead Author: Deepti Ghiya, M.D.
Co-Author(s): Lama Bazzi, M.D.

SUMMARY:
Background: Book 1 of Hippocrates' "Epidemics" begins with instructing physicians to "either help or do nothing to harm the patient." With this in mind, we describe two cases of psychiatric patients with IDDM who delusionally deny the existence of their IDDM. Medications that can treat psychosis into remission now exist. These medications cause metabolic syndrome, which can include or worsen IDDM. Even first-generation antipsychotics are not risk-free. We explore the ethical implications surrounding treating patients with IDDM with antipsychotics when they completely deny the existence of their diabetes. **Case:** The first case describes a 56-year-old woman with schizoaffective disorder, bipolar type, and comorbid IDDM and hypertension. The patient repeatedly presented to the medical ER in diabetic ketoacidosis with blood glucose levels of above 500. The medical team would treat her with insulin over her objection and transfer her to the inpatient psychiatric unit. Her psychiatric stay was often extended by several months due to her refusal of all medications. Court-ordered medication over objection was obtained during every hospitalization, and she would be discharged after her psychosis was controlled with antipsychotics and her IDDM was controlled with court-ordered insulin. The patient was mandated to treatment through the assisted outpatient treatment program, but despite the efforts of her treatment team, the patient was hospitalized repeatedly for diabetic ketoacidosis and continued to deny her IDDM, even when her other psychotic symptoms abated. The second case describes a 63-year-old man with schizoaffective disorder, bipolar type, and comorbid IDDM with many cardiac complications. On admission to the hospital, his blood glucose level was over 450. He required insulin to treat his IDDM, which he refused because he did not believe he had IDDM. His psychosis improved with antipsychotic treatment, but his IDDM complicated his hospital course. He was eventually transferred to medicine to address severe cardiac decompensation and spent a total of 12 months in the hospital before he was placed in a nursing home. **Discussion:** Both cases clearly illustrate ethical issues on informed consent and the dilemma of treating patients with delusional denial of IDDM with antipsychotics that could cause or worsen existing diabetes mellitus. Despite improvement in some psychotic symptoms, both patients continued to deny the existence of their IDDM, complicating their hospital courses and making them unable to live safely in the community without supervision. With the advent of newer psychiatric medications, patients' psychosis can now be treated into remission, offering improved quality of life and productivity. However, research is warranted into the ethical implications of treating psychiatric patients with medications that predispose them to diabetes when they are unable to truly consent, as they deny the existence of their illness.

NO. 58
ANXIETY TREATMENT IMPROVES LICHEN SIMPLEX CHRONICUS
Lead Author: Amy C. Gomez Fuentes, M.D.
Co-Author(s): Mohammed F. Rahman, M.D., Saad F. Ahmed, M.D., Asghar Hossain, M.D.

SUMMARY:
Background: Lichen simplex chronicus (LSC) is a skin disorder characterized by chronic pruritus. This results in lichenification of skin, resulting in leathery and brownish skin with exaggerated skin creases in the affected areas. It is often seen in tandem with psychiatric conditions such as anxiety disorder, depressive disorder and disorders presenting with psychosis. **Case:** We report a case of a 59-year-old Asian female presenting to Bergen Regional Medical Center (BRMC) for treatment of anxiety while also

suffering from LSC. The patient minimizes her psychiatric needs and states that her dermatologist recommended sertraline for treatment of LSC, but she refused treatment. At BRMC, her anxiety was successfully treated with an SSNRI (duloxetine), and her LSC condition also improved. **Objective:** We hypothesize that the prescribed SSNRI might have played a role in improvement of this patient's LSC in two possible ways: 1) through direct effect of the SSNRI on the underlying pathophysiology of LSC and 2) treatment of the anxiety led to behavioral modifications that prevented itching and scratching, which led to physiologic healing without further insults to the skin. **Conclusion:** Different studies have shown the complex interplay of the nervous-immuno-cutaneous system (NICS). Studies have also demonstrated close relations between dermatologic conditions and emotional triggers—as many as 90% of patients with lichen simplex reported emotional triggers. Psychotropic medications and cognitive behavioral therapy have been shown to improve the prognosis of the dermatologic condition as well.

NO. 59

LET'S BUILD BRIDGES AND NOT WALLS: FOR BRIDGE-TO-TRANSPLANTATION: THE POWER OF EFFECTIVE DOCTOR-PATIENT COMMUNICATION IN PATIENTS WITH LVAD IMPLANT

Lead Author: Arpita Goswami Banerjee, M.D.
Co-Author(s): Dr. Ajita Mathur, M.D., Dr. Carolina Retamero, M.D.

SUMMARY:

Background: Left ventricular assist devices (LVAD) have become a benchmark of care for improving overall quality of life in patients with advanced heart failure and are used as bridge-to-transplantation, lifetime support or destination therapy. LVAD patients have shown high levels of depression (21%) and adjustment disorder (37% – 50%); however, scarce literature describe the challenges patients experience in adapting to an altered body image, imposed by the external components of the LVAD system. We present the case of a patient with no prior psychiatric history who developed severe depression after the LVAD procedure due to perceived body image changes and the reality of living with the device. **Objective:** 1) To emphasize the importance of effective communication between LVAD patients and physicians in order to help the patient understand the realistic implications of living with a circulatory implant device; 2) To heighten awareness amongst health care providers about patients' perception of body image and psychosocial stressors, which is pivotal to adapting to an LVAD as a component of the recipient's body and life. **Case:** A 77-year-old female received an LVAD for end stage congestive heart failure refractory to medical treatment. On pre-LVAD evaluation by the psychiatry team, the patient appeared optimistic and eager to undergo the procedure. She denied any current depression or psychosocial stressors. However, after the procedure, she developed severe depression, including transient suicidal thoughts, surrounding her body disfigurement with the LVAD device. She described it as "ugly and heavy" and admitted to feeling "scared and hopeless" every time she saw the scars and the device. The patient's symptoms improved with an SSRI and supportive psychotherapy. **Discussion:** Our case underscores the fact that living with LVAD can impose several lifestyle adjustments including adapting to the weight of the device and the perceived body image changes. Often, heart-failure patients considered for implanted devices underestimate the lifestyle implications. Communication is key between patients and physicians before and after an LVAD, as it is oftentimes delineated by patients' interpretation, their expectations of the procedure, and sometimes by the lack of attention to psychosocial and long-term risks by the health care team. It is imperative that health care professionals communicate effectively with patients and caregivers about expected complications, quality and acceptance of a life that is far from normal, and the prognosis.

NO. 60

ACUTE PSYCHOSIS ASSOCIATED WITH SEPTO-OPTIC DYSPLASIA (DE MORSIER SYNDROME)

Lead Author: Dharmendra K. Goyal, M.B.B.S.
Co-Author(s): E. Vanessa Spearman, M.D., Ajay Pillai, M.D., Thaddeus Y. Carson, M.D.

SUMMARY:

Background: Septo-optic dysplasia (SOD), also known as de Morsier syndrome, is characterized primarily as a variable constellation of anatomical abnormalities of midline brain structure development, occasionally associated with psychiatric manifestations. We summarize a case report on this rare condition. **Case:** A 22-year-old African-American female with past medical history of congenital visual impairment was admitted to the medical ward with self-reported fevers to 102F, auditory and visual hallucinations, and bizarre

behavior. Psychiatry was consulted to manage the psychosis. Upon initial assessment, the patient exhibited alogia and hyper-religious auditory and visual hallucinations with depressed mood. The mother provided the patient's birth and medical history, noting that the patient was born at 10 months of gestation and had neonatal jaundice, which required NICU care, and a history of seizure disorder treated with phenobarbital for one year. The patient had not yet experienced menses and was noted by family report to be anhidrotic. The patient exhibited short stature (157cm) in comparison to parental height. Her vital signs throughout hospitalization were significant for intermittent temperature elevations (37.7F). Serum chemical, microbiologic and cerebrospinal fluid analysis for infectious, autoimmune and paraneoplastic phenomena were negative. Laboratory analysis revealed low normal growth hormone level (0.03ng/mL), depressed insulin-like growth factor binding protein-3 (0.07ng/mL) and depressed morning plasma corticotrophin (8.8pg/mL). MRI of the brain confirmed the diagnosis of septo-optic dysplasia. Her symptoms of depression and psychosis improved with a trial of fluoxetine (40mg daily) and risperidone (1mg at bedtime). **Discussion:** SOD is a rare congenital disorder composed of a variable constellation of midline brain developmental abnormalities including optic nerve hypoplasia, agenesis of the septum pellucidum, abnormalities of the corpus callosum and pituitary dysfunction. Mutations in the homeobox genes HESX-1, OTX2, SOX2 and PAX6 have been implicated in de Morsier syndrome. In 2008, Bini et al. reported a case of SOD associated with depression and psychosis and treated with antipsychotics and mood stabilizers. To our knowledge, we report the second such association. Diagnostic criteria include the presence of ≥2 of the following: (1) optic nerve hypoplasia, (2) agenesis/hypoplasia of septum pellucidum and/or corpus callosum, and (3) hypothalamic-pituitary dysfunction. SOD has also been associated with recurring seizures, developmental delay, thermoregulatory dysfunction and conjugated hyper-bilirubinemia. **Conclusion:** Septo-optic dysplasia may be variably associated with psychopathology, including depression and acute psychosis, and should be included in the differential in young adults presenting with psychotic symptoms. Further literature reporting of this rare condition should be encouraged for early diagnosis.

NO. 61

THE CONTRIBUTION OF CHILDHOOD ATTACHMENT FAILURE TO DEVELOPMENT OF BORDERLINE PERSONALITY DISORDER IN ADULTHOOD: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Neha Gupta, M.D.
Co-Author(s): Daniel F. Connor, M.D., Bhagya Reddy, M.D.

SUMMARY:

Objective: The purpose of this presentation is to better understand the contribution of childhood attachment failure to the risk of developing borderline personality disorder in adulthood through a case report and literature review. **Case:** A 17-year-old biracial female presents to the children's state psychiatric hospital with symptoms of emotional dysregulation, explosive outbursts, impulsivity, difficulties with interpersonal relationships, and self-injurious behavior. She has had eight psychiatric inpatient hospitalizations within the past six months leading up to the current admission. Childhood history is significant for biological parents who converted to Islam and have been in search of their own identity. As a result, throughout her childhood, the patient had moved multiple times between the U.S. and various foreign countries, as her parents wished to study Islam abroad. In one instance, the patient was living with her father in Yemen, as her mother had left them and moved back to the U.S. In another example, the patient was living alone in Indonesia for two years while her parents moved back to the U.S. Additional stressors also include a reported history of sexual abuse by a female relative, which allegedly occurred during her latency years while living abroad. **Methods:** A focused PubMed search was conducted for pertinent articles selected from the past ten years. **Discussion:** It is hypothesized that multiple chronic stressors occurring during the patient's developing years, including an unstable home environment, multiple disruptions in caregiver availability and sexual abuse, have impaired the patient's ability to develop secure attachments. The failure of developing secure attachments in childhood is causing her difficulty with developing and establishing close and trusting relationships as an adolescent. Such failed relationships have led to histrionic displays of self-injurious behavior and suicidal thoughts. Furthermore, the patient's volatile relationships have been contributing to her impulsive behavior, mood dysregulation and poor sense of self. These are some of the traits that put the patient at an

increased risk for developing borderline personality disorder in adulthood. This presentation will look at the developmental role of attachment, how its failure during childhood can put the child at risk for borderline personality disorder during adulthood and how knowing this relation can help guide treatment.

NO. 62

SUBSTANCE-INDUCED PSYCHOSIS VERSUS SUBSTANCE WITHDRAWAL: A CASE REPORT AND DISCUSSION OF TREATMENT APPROACH AND DIAGNOSTIC FRAMEWORK

Poster Presenter:Pranathi Mruthyunjaya, M.D.
Lead Author: Nandni Gupta, M.D.
Co-Author(s): Kevin J. Li, B.A., Stanley P. Ardoin, M.D.

SUMMARY:
Psychosis prevalence within the illicit substance use population is significantly higher than in the general population, causing significant burden on mental health infrastructure, patients and patients' families. Three recent meta-analyses showed a consistent three-fold increase in risk of psychosis in patients with no past psychiatric history who have ever used cannabis. Polysubstance use, specifically, has been shown in a number of studies to dramatically increase the risk of psychosis. The diagnosis of substance-induced psychosis is often complicated by comorbid diagnosed and undiagnosed psychiatric illnesses and concurrent substance withdrawal. This case presents a 27-year-old African-American female admitted to a state psychiatric facility with the primary diagnosis of psychosis. The two primary differentials for the presenting diagnosis were benzodiazepine withdrawal or cannabinoid-induced psychosis. The case highlights the considerations when diagnosing a severely psychotic patient with catatonic features in the setting of polysubstance use and possible drug withdrawal. This patient recovered after several days of therapy with oral antipsychotic treatment. A breakdown of the differential diagnosis, an examination of vital elements to consider in diagnosis, and treatment are discussed. A diagnostic framework and treatment approach are synthesized for workup of psychosis in the setting of polysubstance use.

NO. 63

THE THYROID CONNECTION: A CASE OF NEW ONSET PSYCHOSIS

Lead Author: Najma F. Hamdani, M.D., M.H.A.
Co-Author(s): Afia Sadiq, M.D., Kevin Watson, M.D., John Greenert, M.D., M.P.H., Daniel Holse, D.O., Marina Kravtsova, M.S., My-Lien Nguyen, M.S..

SUMMARY:
This is a case report of a 71-year-old male with past history of hypertension and hyperlipidemia who presented to the emergency department with new onset seizures along with high thyroid stimulating hormone levels. The patient was found to have thyroid-stimulating hormone of 97mIU/L in addition to mild hyponatremia. A history of psychotic and paranoid symptoms, along with deterioration in functioning from baseline, was discovered upon psychiatric consultation requested by the primary team. The patient's family described development of paranoid ideation, delusions, increased anxiety, agitation and visual hallucinations three weeks prior to initial emergency room visit that led to discovery of elevated thyroid-stimulating hormone and hyponatremia. The patient had no past psychiatric history or substance abuse history and was functioning at his baseline prior to the appearance of his symptoms. Disturbances in thyroid hormone metabolism have been known to cause depression, anxiety, emotional lability, irritability, memory and cognition problems, and, in some cases, psychotic symptoms. This case report describes new onset psychosis in the setting of undiagnosed hypothyroidism, which initially presented as seizures. We discuss etiology, presentation, treatment, prognosis and literature review of new onset psychosis in the setting of hypothyroidism. We conclude that a timely diagnosis and treatment leads to full remission and return to baseline. This case report highlights the importance of keeping medical causes of psychiatric illnesses in mind. New onset symptoms, especially in the elderly without any prior history, should prompt investigation into medical causes such as thyroid hormone abnormalities to avoid prolonging the course of the disease and long-term sequelae.

NO. 64

SAFETY PRECAUTIONS FOR A PSYCHOTIC PATIENT WITH PICA ON THE INPATIENT SERVICE

Lead Author: Amina Hanif, M.D.
Co-Author(s): Luisa Gonzalez, M.D., Panagiota Korenis, M.D., Eliana Shaul

SUMMARY:
PICA is the persistent ingestion of non-nutritive substances that persists for a period of at least one

month at any age in a developmentally inappropriate and culturally unacceptable manner, according to *DSM-5* criteria. PICA is one of the eating disorders that presents with an increase in hospitalization, length of stay and cost. PICA is common in children; however, in adults, it is associated with mental retardation, psychosis (schizophrenia) and obsessive compulsive spectrum disorders. Foreign body aspiration is potentially life threatening and may result in choking, poisoning, infection, and intestinal obstruction and perforation. The potential consequences of this behavior pose serious health and safety concerns on the psychiatric inpatient unit. PICA interventions conducted in the past for patients with developmental disabilities are no longer used, and very limited literature is available regarding psychopharmacological management in this patient population. Here we describe the case of a 23-year-old, intellectually disabled woman with a history of major depressive disorder with psychosis and PICA who presented with suicidal ideation and command auditory hallucinations telling her to swallow objects, pull her hair, and cut and scratch herself. She reported that whenever she finds herself in a confrontational or stressful situation she swallows plastic objects as her coping mechanism. This behavior has led her to be hospitalized in the medical and psychiatric units 13 times in the last three years with similar presentations. We aim to explore and discuss the therapeutic course and safety precautions implemented while treating such challenging patients on the inpatient service, as well as treatment strategies utilized to reduce frequent hospitalizations.

NO. 65

A CASE OF LARYNGEAL DYSTONIA IN A YOUNG MALE RECEIVING PALIPERIDONE PALMITATE

Lead Author: Shariq Haque, M.D.
Co-Author(s): Najeeb Hussain, M.D.

SUMMARY:

Objective: The movement side effects of antipsychotics are well known and documented, including those of tardive dyskinesia. Those seen in the orobuccolingual region are often attributed to tardive dyskinesia, which is often a potentially irreversible side effect. TD can be severe enough to cause intermittent obstruction of the glottis, which is attributable to repetitive abnormal adduction of the vocal cords. The most feared complication of this side effect is acute laryngeal dystonia (ALD), which may be potentially life threatening. Traditionally, atypical agents are favored over typical ones in their side effect profile, especially for dyskinesia. However, by no means does this mean atypical agents are devoid of the risk of TD. Risk factors include being a young male, high doses of antipsychotics, parenteral administration, and recent cocaine, amphetamine or alcohol use. There have only been a few cases described in the literature of paliperidone causing LD. **Methods:** Case presentation and literature review. We present a case of a young male patient who developed LD while receiving high doses of paliperidone palmitate. **Case:** A 25-year-old African-American male presented to the inpatient psychiatric unit with a compliant of “needing medication refills." He had a disorganized thought process and collaterally revealed that his home was unkempt and dirty. The patient had received a diagnosis of schizophrenia and was receiving paliperidone palmitate at the maximal maintenance dose of 234mg monthly. The patient had no acute complaints; however, on examination, it was noted that while the patient was talking, he would stop midsentence and click his throat, patient continued the conversation just as if nothing had happened. The fact that the patient’s voice was affected indicated an involvement of the vocal cords. The patient himself did not seem bothered by the symptom, and benzotropine 1mg BID did not ameliorate his symptoms, which further reinforces the likelihood that the tic is due to LD. As the patient was stabilized on his regimen, no change was made in the inpatient setting, and outpatient follow-up was arranged after discharge. **Discussion:** In our case, the severity of LD that the patient developed did not warrant acute intervention and would be managed on an outpatient basis. The patient met several risk factors for developing LD, including being a young male and being administered high doses of paliperidone parenterally. Our case also highlighted the importance of recognizing LD when it doesn’t manifest in obvious symptoms like dysphagia or dysphonia.

NO. 66

A CASE REPORT OF ADDERALL-INDUCED BIZARRE DELUSIONS

Lead Author: Michael R. Harrigan, M.D., M.B.A.
Co-Author(s): Asghar Hossain, M.D., Vandana Doda, M.D.

SUMMARY:

Objective: To report the association of Adderall use and psychosis presented as bizarre delusions and the possible role of life stressors in the development of Adderall-induced psychosis. **Methods:** Literature search was done using PubMed on “Adderall induced psychosis,” “amphetamine overdose” and “amphetamine induced psychosis." **Background:** Adderall is a stimulant medication that is a mixture of D and L isomers of amphetamine. Adderall is used in the treatment of many psychiatric disorders, including ADHD. Chronic and high-dose consumption of Adderall can cause psychosis, presented as delusions, hallucinations, agitation and anxiety resembling schizophrenia. **Case:** We present a case of 55-year-old male with a year history of bizarre delusions and visual hallucinations. The patient reported being attacked by gamma rays from airplanes infecting his blood with radiation. These delusions worsened by recent life stressors, first being laid off from his job and then hearing about his family being executed in Syria. The patient was taking prescribed Adderall for ADHD for the last six years. He reported taking Adderall more than the prescribed dose. Multiple hospitalizations for delusions were reported in the past year. On examination, he was obese with anxious mood, goal-directed thought process and poor judgment. A diagnosis of Adderall-induced psychosis was made, and the drug was ceased. He was monitored closely for withdrawal symptoms and a CT ruled out any intracranial pathobiology. The patient improved within a week of stopping Adderall, and no delusions or hallucinations were reported in the follow-up visits. **Conclusion:** Adderall can lead to psychosis with bizarre delusions and hallucinations similar to schizophrenia when used chronically and in higher than the recommended dose. Physicians should be cautious while prescribing Adderall in patients, as substance abuse is common. More studies are needed as to whether life stressors and other social factors (loss of job and execution of family back home in this case) decrease the threshold for development of psychosis in patients taking Adderall. Physicians should screen patients for past history of substance abuse, other psychiatric disorders and life stressors before prescribing Adderall for various psychiatric disorders.

NO. 67

A CASE OF MISTAKEN IDENTITY: WHEN ORGANIC PATHOLOGY IS THOUGHT TO BE PSYCHOLOGICAL IN ORIGIN

Lead Author: Christopher Harris, D.O.
Co-Author(s): Lourdes Villacis, D.O., Michael Mrizek, M.D.

SUMMARY:

When a 32-year-old man without a past psychiatric history presented to the hospital with a month-long history of diffuse, generalized weakness; significant weight loss; and hoarseness without an apparent cause was admitted to general medicine, psychiatry was quickly consulted. The initial reason was because the admitting team noted the patient’s effort during the initial evaluation was minimal, and there was a concern for there being a volitional component to his presentation. Furthermore, multiple other subspecialties were consulted to evaluate the patient, all of whom also recommended the patient be seen by psychiatry for a concern of a “primary psychological component." Despite not knowing what the medical diagnosis was (if there was one), psychiatry approached this case with an open mind. Psychiatry encouraged the primary team to continue with the medical work-up and refrain from making a psychiatric diagnosis (if there was one) until after the completion of the full medical work-up. We provided support and motivation to the patient as well as the primary treatment team. There was a marked anemia found on admission labs, which provoked a work-up of toxins, heavy metals and malignancy. Psychiatry obtained a more detailed history, in which the patient revealed he was a victim of a shooting. About two to three days into the hospitalization, a medical diagnosis of lead poisoning secondary to retained bullet fragments was made, and the patient was treated appropriately. Psychiatry continued to follow the patient due to a concern of possible neuropsychiatric complications of lead poisoning. Questions that were raised during the evaluation of this patient’s case were 1) When is the appropriate time to consult psychiatry? Is it ever too soon to consult psychiatry? 2) What’s the role of psychiatry while a patient’s diagnosis is unknown and he or she is undergoing extensive work-up for vague symptoms? 3) How should the psychiatrist approach such a patient? How should the psychiatrist approach the primary medical team?

NO. 68

PSYCHIATRIC MANIFESTATIONS CO-OCCURRING IN A FATHER-SON PAIR WITH WAARDENBURG SYNDROME

Lead Author: Joseph Hart, B.A.
Co-Author(s): Kalpana Miriyala, M.D.

SUMMARY:

Waardenburg syndrome type I (WS1) is an auditory-pigmentary disorder characterized by congenital sensorineural hearing loss and pigmentary disturbances of the iris, skin and hair, along with dystopia canthorum (lateral displacement of the inner canthi). It is an autosomal dominant disorder; however, the phenotype of WS1 is highly variable, even within a family. Hence, true prevalence of the disorder is undetermined, and estimates vary from 1:20,000 to 1:40,000, comprising nearly 3% of congenitally deaf children. Sequencing and deletion/duplication analysis of the PAX3 gene on chromosome 2 can detect up to 90% of the pathogenic variants of this gene that are determined to cause WS1. We describe a four-year-old male presenting with a clinical diagnosis of WS1. He exhibited dystopia canthorum, an affected first degree relative, medial eyebrow flare, broad high nasal root and hypoplastic nasal alae. He did not have hearing loss, pigmentation anomalies or intellectual disability. However, he did have less commonly occurring symptoms of spina bifida and myelomeningocele, with hydrocephalus. His mother reported symptoms of attention deficit, hyperactivity and anxiety. Family history revealed that the father had congenital deafness in the left ear, a white forelock, heterochromic irides and wide spacing of the eyes. He had a diagnosis of ADHD as a preschooler and continues to have panic attacks and social anxiety. The paternal uncle and paternal grandfather also manifested symptoms of deafness, white forelock and dystopia canthorum. None were formally diagnosed with WS. Psychiatric symptoms including intellectual disability are not commonly described as part of the syndrome. We reviewed reports in the literature that described psychiatric symptoms such as aggression and irritability in patients with WS1, all of whom had deafness and/or intellectual disability. While we cannot draw any conclusions from the associations, we believe it is worthwhile reporting this case for the following reasons: 1) Our patient exhibited psychiatric symptoms in absence of deafness or intellectual disability. 2) WS should be considered a diagnosis and investigated even in the absence of auditory or pigmentary symptoms, since it can be relevant to genetic counseling due to the autosomal dominant nature of the disease. 3) Though father and son have a different phenotypic manifestation of WS1, they exhibit a similar behavioral phenotype. Further genetic evaluation may lead to clues regarding the genetic bases for psychiatric disorders such as ADHD.

NO. 69

EXPLORING STAFF ISSUES FOR CHILD TRANSGENDER PATIENTS IN THE CHILD PSYCHIATRIC INPATIENT UNIT: A CASE REPORT

Lead Author: Rabiya Hasan, M.D.
Co-Author(s): Meghan Starner, M.D., Chioma Iheagwara, D.O.

SUMMARY:

Background: There remains much debate among health practitioners on what is the most appropriate course of treatment for children and adolescents with gender dysphoria due to a lack of evidence-based practices. Furthermore, there are no published guidelines that address the needs of transgender adolescents in an inpatient psychiatric setting. Gender dysphoria has a highly variable presentation; thus, individualized treatment plans are necessary. Beyond the problems faced by the inpatient treatment team to formulate an individualized plan, implementation of these plans can prove difficult due to issues with unit staff such as unfamiliarity with transgender patients or how conflicts with staff members' cultural and religious backgrounds can affect care. This case brought to light these difficulties on the inpatient unit as well as in what ways the patient's individualized treatment had to differ from other children on the unit. **Case:** A 12-year-old male-to-female (MTF) transgender adolescent was admitted on an involuntary basis for self-injurious behavior, suicidal ideation and elopement from home. The patient endorsed suicidal ideation secondary to her parents not being accepting of her gender identity. No other symptoms or history suggestive of psychosis, mania or anxiety were present, and she endorsed the use of cannabis and alcohol in social settings. On the unit, there were difficulties with staff, such as 1) referring to her by her chosen (female) name rather than her legal name and using the correct pronoun when addressing/talking about the patient; 2) understanding why and when the patient's treatment needs had to differ from other children on the unit; 3) some staff members' personal struggles to care for a transgender patient when it conflicted with religious and cultural beliefs, leading to some asking to be moved to another unit while the patient remained admitted. We will also discuss the results of a staff survey about transgender patients. **Discussion:** Very few physicians feel comfortable

treating transgender youth; thus, not surprisingly, hospital staff encounter similar difficulties. However, there is very little research or guidelines about how best to treat transgender youth in the acute psychiatric setting or how to train and set guidelines for staff on the unit. Furthermore, there is little guidance in the literature of how to best set the balance to respect the needs of both the patient and the staff, which is often left to the clinical judgement of the treating child psychiatrist. Discussion and research of such issues can be an important step in raising awareness of the need for protocols to facilitate the best possible care. This is an increasingly important issue, as awareness of the transgender community continues to grow in the media. Thus, the psychiatric community has to adapt and lead the forefront on how to educate others about possible treatment options and barriers.

NO. 70

FATAL MULTI-ORGAN FAILURE FROM DIPHENHYDRAMINE OVERDOSE

Lead Author: Vineka Heeramun, M.D.
Co-Author(s): Najwa Pervin, M.D., Al Zainab Obaidi, M.D., Mukul Bhattarai, M.D.

SUMMARY:

Background: Side effects of diphenhydramine usually include tachycardia, palpitations, drowsiness, sedation and blurry vision. It has rarely been reported as causing multi-system organ failure. It is also more known as an over-the-counter sleeping aid and as a cutting agent for heroin. We report a case of multi-organ failure from diphenhydramine overdose and raise the alarm on the toxic combination of diphenhydramine with heroin, exacerbating respiratory depression. **Case:** A 43-year-old African-American male patient with a history of polysubstance abuse was brought in by the ambulance. The patient's roommate called 911 after she found the patient to have altered mental status and difficulty breathing. Initially in the emergency room, the patient was agitated, screaming and complaining of generalized body ache. He was suspected to have overdosed on heroin, but the toxicology screen was negative except for alcohol. Laboratory values were indicative of multi-organ failure with elevated renal function tests and liver function tests. Soon after arrival to the emergency room, the patient was found to be more acidotic and had difficulty protecting his airway. He had to be intubated emergently. His creatinine level peaked at 12.It was a dilemma as to what would cause such a severe renal insufficiency and multi-organ failure. Further history then revealed that the patient had actually been planning to have a heroin party, but his friend "tricked" him and gave him a bag of crushed diphenhydramine instead. Unaware of this, the patient snorted the diphenhydramine, thinking that it was heroin. We now had the explanation to his multi-organ failure—Diphenhydramine, which is usually considered "benign." During his hospital stay, the patient was monitored carefully and treated conservatively. His creatinine went back to normal without hemodialysis, he was extubated and his liver function tests normalized. **Conclusion:** Diphenhydramine is a rare cause of multi-organ failure. Our case illustrates that it can lead to elevated creatinine kinase, creatinine peaking up to 12 and respiratory depression requiring intubation, all of which reverted back to normal after diphenhydramine was discontinued. Diphenhydramine is available over the counter and is used extensively to help with sleep, especially in the elderly population. It is also used extensively to "cut" heroin. While it is known to give heroin addicts a good "nod," it can lead to fatal consequences, although it is typically known for being a benign substance. When taken in conjunction with heroin, it can further exacerbate respiratory depression. We think that it is important to raise awareness to the potentially fatal consequences of using diphenhydramine, which is available over the counter.

NO. 71

SEIZURES DISMISSED AS PSEUDOSEIZURES

Lead Author: Vineka Heeramun, M.D.
Co-Author(s): Chenelle Joseph, Anshul Pandey, Nicole Abbott, Ayame Takahashi

SUMMARY:

Background: Features suggestive of psychogenic nonepileptic seizures (PNES) include asynchronous movements with thrashing, pelvic thrusts, absence of autonomic manifestations, forced eye closure, rapid reorientation, crying and vocalizations, incomplete loss of consciousness, absence of incontinence, and self-injury. Up to 15% of PNES occur in conjunction with seizure disorder. It is important to rule out organic disease before coming to the diagnosis of PNES. We present a case of a patient who was dismissed as having pseudoseizures when she actually had a concomitant seizure disorder. **Case:** A 15-year-old female patient

presented to an outlying hospital with multiple episodes of jerking movements that started with right eye and right arm twitching, followed by difficulty breathing that did not improve with the use of inhalers. One of the episodes was witnessed in the emergency room, after which, she was discharged home on sertraline and outpatient EEG. Her symptoms persisted, so she went back to the ER. She was told that she was "faking it" while she had an episode. Frustrated, the patient's mother sought treatment out of town. She was seen by a pediatric neurologist, who diagnosed her with concomitant PNES and seizures after reviewing her EEG. She was started on antiepileptic drugs, which significantly reduced her seizures. **Conclusion:** The dramatic presentation of PNES can lead to under-recognition of concomitant neurological problems. PNES remains a diagnosis of exclusion and often occurs with seizures. Our patient would have had an untreated seizure disorder since her episodes were mislabeled in the ER.

NO. 72

USE OF CLOZAPINE IN A CHRONIC SCHIZOPHRENIC DURING INDUCTION CHEMOTHERAPY AND STEM CELL TRANSPLANT: ANTICIPATORY MEASURE TO CONSIDER

Lead Author: Umair M. Hemani, D.O., M.S.
Co-Author(s): Arina Chesnakova, M.P.H., Anis Rashid, M.D.

SUMMARY:

Background: Clozapine, an atypical antipsychotic, has been widely used in treatment-refractory schizophrenia for over 20 years, as it has been superior to other antipsychotics. Due to its risk of agranulocytosis, the prescriber and patient must be registered on one of the six clozapine manufacturer registries, which requires strict monitoring for agranulocytosis. This can become a serious challenge for consult-liaison psychiatrists and requires a risk-benefit assessment, psycho-social evaluation of needs and communication among various treatment teams during cancer treatment. **Case:** Mr. O. is a 34-year-old Caucasian male with a past psychiatric history of schizophrenia diagnosed at age 16 who was maintained on clozapine 200mg qAM and 300mg qhs for over 10 years. Mr. O. was diagnosed with non-Philadelphia chromosome B-cell acute lymphoblastic leukemia in 2009. Given the patient's significant history of self-mutilating behavior, auditory hallucinations, aggression, delusions, multiple hospitalizations and violence, it was decided to continue clozapine due to high risk of decompensation if clozapine was discontinued or switched. A waiver was obtained from Novartis Pharmaceuticals registry to allow treatment with clozapine despite neutropenia secondary to chemotherapy. In 2014, Mr. O. had a relapse of his disease with limited response to chemotherapy and was scheduled to receive a stem cell transplant in August 2015. Since gastric absorption could have been a potential problem due to GI-GVHD, the consult-liaison team attempted to register with VersaCloz (clozapine oral suspension), but was denied, as the patient's WBC count was 0.0/mm3 post-stem-cell transplant. His post-transplant course was complicated by grade 1 mucositis but was maintained on clozapine tablets as per his outpatient psychiatrist and continued despite two episodes of neurotopenic fevers, line infection, pneumonia and herpes simplex virus on upper lip. The patient successfully engrafted after 14 days post-transplant. A social work consult and case management was provided to help evaluate social needs and assist with caretaker needs. **Discussion:** Despite clozapine's risk of agranulocytosis, its use can be justified in refractory schizophrenia with concurrent chemotherapy and stem cell transplant for ALL. A particular problem was navigating various manufacturer registries, which may no longer be a problem, as the FDA recently announced that there will be one centralized registry under the Clozapine Risk Evaluation and Mitigating Strategy (REMS) program starting October 2015. Early anticipation of both medical complication (infection, graft vs. host disease, secondary absorption problems, drug-drug interaction) and social issues (caregiver support, financial support, housing) should be addressed prior to stem cell transplant. We emphasize good communication between providers, a multi-system approach and pre- and post-transplant clozapine levels to ensure appropriate serum levels.

NO. 73

CASE REPORT OF ARIPIPRAZOLE USE IN THE TREATMENT OF ADOLESCENT STUTTERING

Lead Author: Julia L. Hoang, M.D.
Co-Author(s): Shalin R. Patel, M.D., Gerald A. Maguire, M.D.

SUMMARY:

Background: Childhood-onset fluency disorder (stuttering) can be a debilitating disorder, leading to communication avoidance, anxiety and other negative symptoms affecting daily interactions. It is

likely a multifactorial process that underlies stuttering and may arise from abnormal cerebral dopamine activity. Imaging studies have suggested that people who stutter exhibit increased dopamine activity. Documented associations exist between stuttering and tic disorders, postulating that they may possibly share a common pathology. Studies have shown considerable reduction in tic severity using antipsychotics with D2 blockade such as haloperidol for Tourette syndrome; however, tolerability has been poor secondary to side effects. Given its relative favorable safety profile and mechanism as a dopamine partial agonist, aripiprazole may hold promise in the treatment of stuttering. **Case:** A healthy 13-year-old adolescent male presents with the complaint of stuttering that began in the first grade. He has no significant medical problems or family history of stuttering. The patient's stuttering had interfered with academic activities and social functioning. He sought pharmacological treatment, as he had failed to adequately respond to several courses of speech therapy. He was started on aripiprazole 5mg daily and titrated as clinically indicated. Within a year, he showed good response and notable improvement in speech fluency. **Methods:** The patient's speech was assessed before and after initiation with aripiprazole with a 300-word reading sample and a 300-word conversational speech sample. The assessment measured frequency of disfluency (speech disfluencies per 100 words spoken) with range and disfluency types that included audible sound prolongations, sound/syllable repetitions, whole word repetitions, inaudible sound prolongations and revisions. **Results:** Notable improvement in speed-averaged disfluency was observed with aripiprazole in the treatment of stuttering with a 75.23% decrease in the reading sample and 61.44% decrease in the conversational sample. **Conclusion:** Given its favorable safety profile, aripiprazole holds promise as a viable pharmacological treatment for adolescent stuttering. Further controlled studies and research are warranted.

NO. 74

BROWN SUGAR: A CASE OF OPIATE-INDUCED PARALYTIC ILEUS

Lead Author: M. Daniel Holsey, D.O.
Co-Author(s): Afia Sadiq, M.D., Kevin Watson, M.D., Najma Hamdani, M.D., M.H.A., John Greenert, M.D., M.P.H., Caleb King, M.S., Grant Kirby, M.S..

SUMMARY:

This is a case report of a 61-year-old male with a past history of hepatitis C virus infection, hypertension, and heroin and alcohol use disorder who presented to the emergency department with abdominal distention, a two-week history of nausea and a two-week history of liquid bowel movements. CT scan revealed ileus, which was attributed to long-term opiate use. The patient was admitted on methadone 70mg daily, which he had taken for 10 years. The patient endorsed a 40-year history of heroin use, from which he had been sober for 10 years. The patient denied gastrointestinal issues prior to two weeks before admission. The primary team consulted psychiatry to obtain recommendations for medication management. Opiate use has long been known to cause constipation in patients, and long-term or high-dose use has led to such complications as narcotic bowel syndrome, resulting in severe and chronic pain that significantly resolves after withdrawal of the opioid. This case report discusses the onset of paralytic ileus in the setting of long-term opiate use. An explanation will be provided of the etiology, physiology, diagnosis, management and literature review of opiate-induced paralytic ileus. This is a subject that has been under-discussed in the literature, and there are very few case reports of similar diagnoses. This case report emphasizes the potential side effects of long-term opiate use and the importance of adequate management of opiate use disorder.

NO. 75

"THIS IS SERIOUS": DELAY IN CANCER TREATMENT IN A 70-YEAR-OLD FEMALE WITH DELUSIONAL PARASITOSIS: A CASE REPORT

Lead Author: Avjola Hoxha, M.D.
Co-Author(s): Yarelis Guzman-Quinones, M.D., Almari Ginory, D.O.

SUMMARY:

Background: Delusional parasitosis (DP) is a rare disorder in which patients believe that they are infested with parasites despite medical evidence to the contrary. In some cases, patients describe abnormal sensations such as crawling or biting; others describe visual hallucinations consisting of bugs or mites on their skin, hair and even in their homes. The "matchbox sign," a phenomenon in which the patient brings samples of what they perceive to be parasites or insects to show their providers, is common with this condition. Patients with DP will try to self-treat by spraying pesticides in

the house, having intense bathing and cleaning rituals, and avoiding contact with others in an effort to limit or get rid of the infestation. Although no specific guidelines are available for the treatment of DP, both pimozide and risperidone have been reported to show reduction in the severity of the delusions. **Case:** We present the case of a 70-year-old Caucasian female who presented to an outpatient medical clinic with complaints of head and groin lice as well as parasites in her stool. She described, in detail, the three types of parasites she believed were infesting her body as well as their life cycle and preference for light. She was initially treated with benzyl alcohol lotion and albendazole prophylactically. However, symptoms persisted, and further medical evaluation consisting of a physical examination and routine lab work was ordered. Stool cultures, fecal ova and parasite testing, vitamin levels, and neuroimaging were also ordered. Upon receiving negative results for all of the aforementioned tests, the patient was given a provisional diagnosis of parasitophobia with delusional parasitosis being the most likely explanation for her complaints. Psychiatry was consulted seven months later when it became apparent that the patient was unable to care for herself and was at risk for self-harm due to her delusions. On interview, she reported bathing herself with bleach, “bug bombing” her house with pesticides on multiple occasions, and postponing lung cancer surgery numerous times because of her belief that she would infect the medical staff as well as the operating room. It was determined that the patient required involuntary admission for further psychiatric evaluation and treatment of her condition. After two weeks of treatment with risperidone, the patient showed significant reduction in her delusions and no longer believed that she was infested with parasites. **Conclusion:** Health care providers are well aware that delusional parasitosis presents multiple barriers to receiving psychiatric care. However, they must also remember that it can also create barriers to receiving medical care, which can result in both a delay of diagnosis as well as treatment of potentially life-threatening conditions.

NO. 76

CHALLENGES IN THE MANAGEMENT OF PSYCHOSIS IN TEENAGE PREGNANCY: A CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Geeta S. Ilipilla, M.D.
Co-Author(s): Dina Greco, D.O., Katherine Napalinga, M.D.

SUMMARY:

Background: The onset of major psychiatric illnesses such as schizophrenia often occurs in the teenage period, which coincides with child bearing age in women. Psychiatrists in child and adolescent psychiatry services are likely to encounter challenges of managing psychiatric disorders in teenage pregnancy. The prevalence of psychiatric disorders in pregnancy ranges from 14 – 30%. Untreated psychiatric illness during pregnancy is associated with risks to both the mother and child and adverse pregnancy outcomes. While the first generation antipsychotics (FGAs) used in pregnancy are known to have a lower risk of major malformations, recent reports indicate that exposure to FGAs in late pregnancy could lead to significant extra pyramidal symptoms, unstable body temperature, withdrawal symptoms, respiratory distress and seizures in the new born. There has been an increase in literature on the use of second generation antipsychotics (SGAs) in pregnancy. A recent meta-analysis has shown that prenatal use of SGAs may present an increased risk of major malformations and preterm delivery. Few early studies reported that neonates exposed to SGAs were significantly large for gestational age. We present the case of a 16-year-old Latino female with 22 weeks gestation G2P0L0, admitted to the inpatient psychiatric unit with active psychotic symptoms and agitation. The challenges in the management of her psychosis and behavioral agitation are discussed. **Methods:** A retrospective chart review of the case is performed, and a PubMed search is conducted using the key words “Psychosis,” “Pregnancy” and “Adolescence." **Discussion:** Pregnancy in adolescence is a risk factor for adverse medical and psychosocial outcomes and psychiatric illness. The challenges in the management of psychosis and agitation in teenage pregnancy are multiplied by the overlap of substance use disorders and lack of clear guidelines on the use of antipsychotic medication in this population. There is limited information on pharmacokinetic changes in adolescent pregnancy compared to adults. Our patient posed particular challenges in treatment, as she developed severe extra pyramidal symptoms and neuroleptic malignant syndrome with haloperidol and cholinergic toxicity with diphenhydramine. Her aggressive behavior often demanded placing her in restraints. The best practice guidelines for the use of restraints in pregnant women and girls in the correctional system prohibit the use of restraints in pregnancy, as they

exert pressure on the back or abdomen, inhibiting circulation and oxygen delivery to the fetus. The psychosis eventually responded to quietiapine started at very low dose followed by gradual titration. **Conclusion:** 1) There is a lack of clear data on the prevalence and treatment of psychiatric disorders in adolescent pregnancy. 2) A thorough risk-benefit analysis should be done in every case, and treatment of psychosis or agitation should use the lowest doses possible as monotherapy.

NO. 77

RAPID DEVELOPMENT OF PULMONARY EMBOLI TWO DAYS AFTER ONSET OF CATATONIC SYMPTOMS: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Danielle Ivanova, D.O.
Co-Author(s): Melanie Miller, M.D., Bruce Cohen, M.D.

SUMMARY:
Objective: Catatonia is a condition that can progress to dangerous sequelae very quickly and often requires immediate action; typically, the standard of treatment is administering high doses of lorazepam. However, if this is ineffective or if the patient has autonomic instability, emergent ECT is necessary. One important factor to consider is that catatonia predisposes the patient to a hypercoagulable state and increases likelihood of dangerous clots and emboli. We present a case to highlight not only the importance of early anticoagulation for the catatonic patient, but also to emphasize that clots may develop quickly and leave a short time to escalate care. **Case:** we examine the case of a 59-year-old female with no prior psychiatric history who was brought to the ER after she inexplicably stabbed her husband and attempted to cut her neck and wrists. Psychiatric evaluation revealed six months of positive neurovegetative symptoms with new onset of psychosis. She was diagnosed with MDD with psychosis and started on mirtazapine and olanzapine. She developed catatonia over the next few days, which progressed in severity, and over the course of two days, the patient became unresponsive. Her ability to take any PO nutrition became impaired, and she did not have any significant improvement on lorazepam. The decision was made to perform ECT, and one dose of SQ enoxaparin was ordered but not given prior to ECT. The patient received two rounds but did not have a sufficient seizure. Enoxaparin was given the evening following ECT. The patient exhibited moderate improvement in her catatonic symptoms after ECT; she was able to sit up, state her name and have spontaneous movement. Later in the evening, the patient endorsed SOB and became hypoxic (85% on room air), tachypneic and tachycardic (120s). Labs showed elevated D-dimer (9551), elevated troponin (0.76), elevated BNP (344) and new EKG changes (sinus tachycardia with minimal ST elevation with T-wave inversions). Physical exam was unremarkable aside from JVD. CTPA demonstrated multiple PEs and evidence of right heart strain; the patient was transferred to the medical floor and started on enoxaparin 70mg q12h for treatment and NC oxygen and continuous telemetry monitoring. She remained hemodynamically stable, so systematic thrombolytics were not warranted. **Discussion:** Literature review highlights the necessity of aggressive anticoagulation in patients who develop catatonia. Autopsies of catatonic patients revealed a seven percent mortality from PE. McCall et al. (1995) revealed that fatal embolisms associated with catatonia occurred after two weeks or more of catatonic symptoms. However, as our case demonstrates, emboli can occur within the first few days after onset of catatonia. This is especially important if other cardiovascular risk factors are present. Prophylaxis with once daily SQ enoxaparin 40mg is justified in an immobile catatonic patient within the first few days of nonresponse to treatment.

NO. 78

ELOPEMENT IN AUTISM SPECTRUM DISORDERS (ASD) AND EVOLVING CASE PRESENTATIONS: A CASE REPORT AND REVIEW

Lead Author: Veeraraghavan J. Iyer, M.D., M.B.B.S.
Co-Author(s): Tolga Taneli, M.D., Rashi Aggarwal, M.D.

SUMMARY:
Background: Roughly 48% of children with ASD attempt to elope from a safe environment, a rate nearly four times higher than their unaffected siblings. Elopement puts the children at increased risk of accidents and other such high risk behaviors. We present two adolescent patients with ASD who displayed elopement behavior. We reviewed the literature to better understand the reasons, risks and factors used in the management and suggest innovative means of achieving nonelopement. **Case:** Case 1: A 13-year-old autistic Caucasian boy was brought in to the ER by the police when they found him loitering on the streets. The boy was very

agitated on presentation, and on evaluation, he believed that his parents were trying to harm him. A week prior to the present admission, he was admitted to the ER for elopement. He had been harboring these feelings of paranoia against his parents for the past three months. He was grandiose and paranoid, and he believed that he was “Percy Jackson” from the movie of the same name. He was comparing himself to heroic characters from TV shows and comparing his parents to the villains from the same shows; for instance, he compared his mother to “Medusa, the evil witch." The parent reported that the SRS (Social Responsiveness Scale) score for this child was 10/16. Case 2: A 15-year-old boy was brought in by the police for loitering around at a mall parking lot and playing with the elevator. (He was preoccupied with parking lots and mall elevators.) He was chanting out phrases from his favorite TV shows, mostly kids’ shows and cartoons. This was the second time he had eloped from his home. He was wearing a tracking device on his wrist, in spite of which, the police could not track him owing to range of device signal issues. The child had walked about 17 miles on foot and was dehydrated and tired when presented to the ER. The parent reported that the SRS score for this child was 10/16. **Discussion:** In most studies on elopement, individuals were treated with multiple interventions such as reinforcement for the absence of elopement, time-out for elopement and graduated level systems in which the individual gained access to less restrictive environments and greater access to reinforcers contingent upon the absence of elopement. Previous studies have shown that physically obstructing or “blocking” can function as a punisher or extinction for elopement behavior. In addition, as is also evident in both our patients, most ASD children are being heavily influenced by TV characters. Thus, the effects and role of TV as a reinforcer contingent on nonelopement behavior should be researched in detail as a means to curtail wandering behavior.

NO. 79

THE “CAITLYN JENNER” EFFECT

Lead Author: Robert J. H. Johnston, M.D.
Co-Author(s): Nassima Ait-Daoud, M.D.

SUMMARY:

Research has shown that social media in general has created an “online disinhibition effect” where users say and do things in cyberspace that they wouldn’t ordinarily say and do in the face-to-face world. Media has affected society’s representation of beauty standards, ideal weight and many others aspects of our daily lives, but it can also be used to promote mental health and destigmatization of mental illness. The revelation of Catherine Zeta Jones’s diagnosis of bipolar affective disorder has contributed to dispelling the stigma of such disorders. The LGBT population is at higher risk for depression, anxiety and substance use disorders than the general population. The reason for these disparities is most likely related to the societal stigma and resulting prejudice and discrimination that LGBT individuals face on a regular basis. Popular individuals have served as role models for struggling individuals in the LGBT community and helped in their decision to come out. A day after Caitlyn Jenner released her story of transitioning into a woman, she shattered Twitter records and officially became one of the most famous transgender people. We will describe the case of two patients who were influenced by the positive media attention and response that Caitlyn Jenner received. One of them is a biological male patient diagnosed with OCD who started questioning his gender identity, which took an obsessive quality. He later went on to experiment with women’s clothing and different sexual partners. The second case is that of a biological female patient who was treated for depression and who felt that the media attention given to Caitlyn Jenner and the Kardashian family in general worsened her gender identity confusion and led her to feel more depressed and isolated. We will discuss the cognitive and emotional processes that took place with these two patients. We will summarize some of the unique aspects and struggles faced by the LGBT community and how famous individuals who self-identify as LGBT can affect their mental well-being both positively and negatively. Famous transgender people like Caitlyn Jenner are celebrated very publicly for their glamorous looks, which aligns with Americans’ ideals for what defines beauty. However, for many trans-people, looking like Caitlyn Jenner is an unobtainable goal and may lead to disillusion and depression. We will conclude with a discussion on the importance of the media in shaping social norms and the necessity of enhanced access to mental health to help LGBT people embrace their true identity.

NO. 80

USE OF KETAMINE INFUSION IN CHRONIC REFRACTORY DEPRESSION AND PAIN: A CASE REPORT

Lead Author: Travis W. Jones, M.D.
Co-Author(s): Erik Hamill, B.S.

SUMMARY:
Background: Clinicians are sometimes faced with the challenge of treating chronic depression that is refractory to first-line medications. Ketamine infusion serves as a novel treatment method in alleviating the severity of depression in patients who fall under these circumstances. Ketamine infusion also carries the additional benefit of being an analgesic and may be used in cases of intractable pain with or without depression. In this case, a patient with a past psychiatric history of major depressive disorder refractory to multiple medication trials and concurrent intractable pain presented as an opportunity to test the efficacy of ketamine infusion as a treatment option. **Case:** Mr. G is a 70-year-old Caucasian male with a history of major depressive disorder and idiopathic neuropathy who presented with suicidal ideation secondary to worsening bilateral foot pain. The patient has had a series of visits to the emergency department over the past couple of years under similar circumstances, but now states that his depressive symptoms have increased in severity, and his pain has been building in intensity. As most of his past treatments with various antidepressants and pain medications have proven inadequate or of no benefit at all, it became evident that Mr. G was a candidate for more intensive treatment options such as electroconvulsive therapy (ECT), which the patient had been treated with in the past with some success. However, it was suggested by the ECT psychiatrist that the patient may benefit from undergoing a three-day trial of ketamine infusions as an inpatient under the guidance of anesthesiology. Ultimately, the patient responded well to this treatment method and experienced a significant improvement in both his depression and pain. **Discussion:** Ketamine is an NMDA receptor antagonist mainly used as an anesthetic drug. Its off-label use in the alleviation of treatment-refractory depression with or without pain has been proven in its efficacy through a variety of randomized trials. A meta-analysis comparing ketamine with a control condition in patients with unipolar major depression found a significant and clinically large effect favoring ketamine over a placebo. This evidence proves that ketamine has the potential in being beneficial to clinicians who have already exhausted the use of standard antidepressants and are looking into options for their patient before opting for ECT. This case report demonstrates that ketamine should be viewed as a worthy therapeutic option when treating chronic depression with or without pain that has been refractory to treatment.

NO. 81

ANTI-NMDA RECEPTOR ENCEPHALITIS: FROM LOVE TO MADNESS

Lead Author: Courtney Joseph, D.O.
Co-Author(s): Ajita Mathur, M.D.

SUMMARY:
Background: First described in 2005, anti-NMDA receptor encephalitis is an autoimmune disease characterized by psychiatric symptoms, memory impairment, diminished level of consciousness, seizures and hypoventilation. Information is limited on the development of psychosis and mood instability leading to self-harm in the setting of anti-NMDA receptor encephalitis and concomitant psychosocial stressors. In this report, we present the case of a patient who engaged in severe self-injurious behavior while developing NMDA receptor encephalitis with the acute stressor of a breakup with her boyfriend. **Case:** A 17-year-old Vietnamese female with no past medical or psychiatric history presented to the emergency department with multiple self-inflicted stab wounds to her thighs, wrists and chest. Prior to the incident, she was sent home from school for complaints of “spacing out and walking into corners." Shortly thereafter, she sent her mother a text message stating, “Mom I am going to die. I love you." While in the ICU, the patient was agitated and observed to be psychotic. She developed lip-smacking and recurrent orofacial and distal limb rhythmic movements. She was placed in a medically induced coma for over 100 days due to intractable seizure activity. An ovarian teratoma was found on imaging and surgically removed. After thorough clinical workup, she was found do have positive anti-NMDA receptor antibody CSF titers. She received multiple rounds of treatment and was discharged from the hospital several months later. **Methods:** Review of the patient’s chart and a PubMed search were conducted using the terms anti-NMDA receptor encephalitis, psychiatry, suicide and psychosis. **Discussion:** Anti-NMDA receptor encephalitis is a progressive autoimmune disorder that often presents to the attention of psychiatrists due to its early psychiatric manifestations. However, information on suicide attempts in the setting of anti-NMDA receptor encephalitis is limited. In this case, it is unclear whether there was direct causation

or multiple contributing factors to the patient's self-inflicted stab wounds. It could be coincidence that she happened to have anti-NMDA receptor encephalitis when she broke up with her boyfriend and impulsively decided to end her life. Conversely, the acute psychiatric symptoms of the anti-NMDA receptor encephalitis could have promoted an otherwise healthy young female to injure herself. This case demonstrates the importance of early recognition of and the potential for self-injury in anti-NMDA receptor encephalitis.

NO. 82

CLOZAPINE-INDUCED SIALORRHEA AND INCONTINENCE OF BOWEL AND BLADDER

Lead Author: Astik Joshi, M.D.
Co-Author(s): Shawn McNeil, M.D., Vesela Tzoneva, M.D.

SUMMARY:

Background: Clozapine has some life-threatening side effects, including agranulocytosis and myocarditis. Other common side effects include increased salivation, constipation, tachycardia, drowsiness and weight gain. Here we present a patient who was started on clozapine due to his failure to respond to other antipsychotics and the treatment-resistant nature of his illness. He experienced multiple side effects on clozapine, including transient transaminitis, sialorrhea, urinary incontinence and the extremely rare side effect of bowel incontinence. There is a direct correlation of these side effects to clozapine, as they resolved after clozapine was changed to another antipsychotic. **Case:** This patient is a middle-aged African-American male with a past psychiatric history of treatment-resistant schizophrenia. He was started on clozapine after several trials of more conventional antipsychotics. The patient began to experience sialorrhea after a month. Several medications were administered to stop this side effect, including diphenhydramine, atropine, terazosin, scopolamine and benztropine, which failed to resolve it. In addition, clozapine was decreased down to 200mg BID. The patient also began to experience bladder incontinence (after four months) and imipramine was administered to control this symptom. The patient began to have constipation (after two months) and later on developed nocturnal bowel incontinence (after five months). Five months into his admission, levels of clozapine were obtained and were therapeutic. **Discussion:** Although sialorrhea and urinary incontinence are relatively well known side effects of clozapine, bowel incontinence is an extremely rare side effect. A PubMed search yields one documented case of double incontinence associated with clozapine, and to the best of our knowledge, this is the only documented case of a patient having sialorrhea and double incontinence associated with this medication. The hypothesized mechanism is the antagonism of α1 adrenergic receptors. There are several possibilities for the side effects described. It could be inferred that since the constipation preceded the bowel incontinence, this side effect could have formed out of an adaptive response. Clozapine acts to inhibit both cholinergic and adrenergic receptors, and the sialorrhea may have been a result. Also, the incontinence of bowel may have resulted from 5-HT3 hypersensitivity in the GI tract. Clozapine's relative effect on α-receptors (when compared to other antipsychotics) could also explain the sialorrhea. **Conclusion:** Bowel Incontinence is an extremely rare but worrisome side effect of clozapine. Clozapine may produce adaptive changes in adrenergic and cholinergic systems to explain hypersalivation, urinary incontinence and bowel incontinence as its potential side effects.

NO. 83

NOVEL PSYCHIATRIC DISORDERS (NPD): PEDIATRIC BIPOLAR AND OBSESSIVE COMPULSIVE DISORDER (OCD) AFTER TRAUMATIC HEAD INJURY

Lead Author: Rajasekhar Kannali, M.D.
Co-Author(s): Mackenzie Varkula, D.O.

SUMMARY:

Background: Traumatic head injury in children and adolescents is a major public health problem. Behavioral and psychiatric disturbances are the more frequent consequences of pediatric traumatic head injury. Psychiatric disorders that develop postinjury in patients with no lifetime pre injury psychiatric disorder are often called new onset or novel psychiatric disorders (NPD).While some disorders, like depression and ADHD, are common, others, like obsessive compulsive dsorder (OCD) and bipolar disorder, are rare and often times are associated with significant morbidity and determinants of the quality of life. **Objective:** Our report is aimed at assisting physicians and health care providers to recognize and manage this rare presentation of psychiatric disorders in traumatic head injury children and adolescents, in this case, a combination of obsessive compulsive disorder and pediatric bipolar disorder. **Case:** Mr. Z is a 15-year-

old male admitted to the acute child and adolescent inpatient unit with hyperactivity, sexually preoccupied thoughts, spending of thousands of dollars, increased aggressive outbursts, and inappropriate behaviors and obsessions. Mr. Z has no personal or family history of mental illness or substance abuse; however, he had sustained a comminuted depressed fracture in the left frontal region with subdural hemorrhage a few years ago, which required surgical intervention and repair. Head MRI on admission revealed the inhomogeneity surrounding the region of the skull fracture in the lateral left frontal region. **Conclusion:** Considering the patient's history and psychiatric presentation, his symptoms of mania, obsessions and compulsions are proposed to have developed secondary to the traumatic head injury. In the absence of ideal criteria allowing for the differentiation of mania clearly attributable to traumatic head injury from mania simply observed following traumatic head injury, the close temporal relationship in the absence of other etiology may be the best approach. The variety and frequency of novel psychiatric disorders that may be trauma related emphasizes the importance of a careful consideration of associations with symptoms that help in earlier identification and development of an integrated care plan to improve the total outcome and quality of life for the patient.

NO. 84

A CASE OF PSYCHOSIS IN A PATIENT WITH GRAVE'S DISEASE AND HASHIMOTO'S DISEASE

Lead Author: Vandana Kethini, M.D.
Co-Author(s): Rajesh Gaddam, M.B.B.S., Neha Rane, M.D., Asghar Hossain, M.D.

SUMMARY:

We present the case of a 43-year-old Caucasian female with multiple hospitalizations in the past five years for symptoms of paranoia, hallucinations, bizarre behavior and agitation. The patient had a history of depression and cannabis use, but no history of psychosis or paranoia prior to her first hospitalization. These psychotic episodes were attributed to her substance use, and she was repeatedly diagnosed with cannabis-induced psychotic disorder, onset during intoxication. However, her symptoms recurred following a period of abstinence from drug use. Recent lab work revealed the patient to have both Grave's disease and Hashimoto's disease. We propose that thyrotoxicosis is the cause of this patient's recurrent psychosis. Disorders of the thyroid gland have been known to cause psychiatric symptoms, commonly in hypothyroidism. In thyrotoxicosis, patients present with symptoms of anxiety, restlessness, mood lability and rarely psychosis. There is no specific presentation in such cases, but affective psychoses, with altered mood and activity, are most common. A possible mechanism includes the action of thyroid hormones in the CNS, causing modulation of the beta-adrenergic receptor response to catecholamines, causing psychosis. Most cases of thyrotoxicosis-induced psychosis have been observed in patients with Grave's disease or toxic multinodular goiter. As such, this is a unique case of a patient with both Grave's disease and Hashimoto's disease (with a complicating history of cannabis use) that we should be mindful of in clinical practice. Although a primary psychotic disorder or a substance-induced psychotic disorder should be ruled out, endocrine conditions such as thyroid hormone abnormalities should always be strongly considered.

NO. 85

BROKEN HEART SYNDROME: A CASE OF TAKOTSUBO CARDIOMYOPATHY IN A FEMALE PRESENTING WITH BEREAVEMENT

Lead Author: Mohsin Khan, M.D.
Co-Author(s): Santosh Shrestha

SUMMARY:

Background: Takotsubo cardiomyopathy has a high prevalence rate with chronic anxiety disorders and is associated with a diffuse catecholamine-induced microvascular spasm, dysfunction and myocardial toxicity. This case describes the complexity of psychiatric issues and their impact on cardiac functions. The condition evolved over a period of a few months, requiring inpatient medical and psychiatric treatment. **Case:** The patient is a 38-year-old Caucasian female with a prior history of hypertension and diabetes who was hospitalized secondarily to chest pain and worsening anxiety and eventually required an evaluation by the psychiatric team as well. Cardiac workup showed a low ejection fraction with a diagnosis suggesting Takotsubo cardiomyopathy. The hospital course was notable for her medical complexity as well as her underlying psychiatric illness. Her treatment included lorazepam and metoprolol on an inpatient and outpatient basis, as well as therapy on an outpatient basis. On follow-up echo, her ejection fraction was noted to be significantly improved as well. **Conclusion:** Takotsubo Cardiomyopathy has been

associated with stress in a number of cases with different presenting problems. This case illustrates the complexity and importance of addressing underlying psychiatric conditions, including bereavement, in light of medical comorbidities associated with them.

NO. 86

TO FEED OR NOT TO FEED? THE MORAL DILEMMA OF FEEDING A PATIENT WITH TREATMENT REFRACTORY DEPRESSION WHO REFUSES TO EAT

Lead Author: Surbhi Khanna, M.B.B.S.
Co-Author(s): Jorge Castro-Alvear, M.D.

SUMMARY:

Background: The concept of "moral distress" characterizes circumstances in which one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action. Health care professionals, like all human beings, are morally formed by the requirements of individual integrity in addition to professional integrity. **Objective:** To understand the meaning of "ethically significant moral distress" and "moral integrity." **Methods:** Review current literature on ethical dilemma and medical decision making capacity and case presentation. **Case:** A 68-year-old Caucasian female with recurrent, treatment refractory depression with catatonic features and previous poor response to electroconvulsive therapy presented with altered mental status due to starvation ketoacidosis. The patient also had somatic delusions and complained of dry mouth with "feelings of something being stuck in her throat" without any evidence of organic pathology. She refused treatment at first, stating preference to die, but later allowed the nasogastric tube and was sporadically willing to take some oral intake and medication. The NGT failed because the antidepressants blocked the tube, and thus a PEG became necessary to continue treatment. An ethics consult along with a meeting with her three sisters were organized. The ethics consultants advised the treatment team and family that declining parenteral feeding was ethically permissible; however, the family believed this was tantamount to "starving to death." Subsequently, the consensus was reached that the patient did not have the ability to make complex decisions about her care, and her family elected PEG placement for refeeding. **Discussion:** "Ethically significant moral distress" is the intellectual experience of being unable to act on one's moral knowledge about what one ought to do in specific clinical circumstances. Recent literature demonstrates that moral distress has become an international concern and has implications for satisfaction, recruitment and retention of health care professionals, as well as for delivery of safe and competent quality patient care. A description of mental health practitioners' moral distress can allow for greater understanding of it, enabling practitioners to better recognize and thus be able to address it. Issue to consider: Do patients with refractory depression have the right to die?

NO. 87

LEVOFLOXACIN-INDUCED DELIRIUM AND ACUTE PSYCHOSIS: A CLINICAL CASE REPORT

Lead Author: Jyotsna Kilani, M.D.
Co-Author(s): Valerie Sharpe, M.D.

SUMMARY:

Background: Medication-induced delirium is common among sedatives, narcotics and anticholinergics. Delirium and acute psychotic symptoms related to antibiotics like fluoroquinolones have been reported, though the literature on this potential adverse reaction is sparse. We present a case of a 64-year-old female with no previous psychiatric illness who presented with levofloxacin-induced delirium and psychosis after treatment of a complicated UTI. **Case:** A 64year-old female with multiple sclerosis presented with acute onset of left lower flank pain, dysuria, nausea, vomiting and abdominal pain. Empiric treatment with pippercillin-tazobactam 4.5g IV was initiated for the treatment of UTI, and the patient was switched to levofloxacin 500mg IV after cultures showed growth of pan-sensitive E. coli. Imaging studies revealed moderate right hydronephrosis due to a 5mm right ureteral calculus. Urology was consulted, a right ureteral stent was placed, and the levofloxacin 500mg IV was continued. Within 48 hours after restarting the antibiotics, the patient began showing signs of mental status changes, including bizarre delusions, paranoia, auditory and visual hallucinations, flight of ideas, agitation, confusion, and disorientation. Per our recommendations to the treatment team, levofloxacin was switched to cefepime 400mg daily, and within 72 hours, the patient's mental status returned to her baseline. **Discussion:** CNS side effects, including headache, dizziness, restlessness, insomnia, hallucinations, agitation, acute organic psychosis and delirium, have been reported with levofloxacin. These side effects are thought to be

caused by levofloxacin's inhibition of the GABA receptors and activation of the NMDA receptors. Some confounding events in the patient's admission were the infection leading to acute renal failure and a surgical procedure, which are common causes of delirium in hospitalized patients; however, her mental status changes occurred days after the infection was improving with treatment. After discontinuing the levofloxacin, her psychosis and delirium improved within 24 hours, and within 72 hours, the patient returned to her baseline. In a patient with predisposed risk factors for delirium—infection, postoperative state and acute renal failure—levofloxacin further exacerbated the risk and was likely the cause of her delirium. **Conclusion:** Fluoroquinolones are widely used to treat a variety of infections due to their favorable safety profile and broad spectrum of activity, although acute psychotic symptoms and delirium are rare side effects. Floroquinolones should be considered as a potential cause of delirium and should be used with caution in patients with other risk factors for delirium.

NO. 88

DELIRIOUS MANIA IN BIPOLAR DISORDER: A CASE REPORT

Lead Author: Tyler Kimm, M.D.
Co-Author(s): O. Okusaga, M.D., M.Sc., P. Schulz, M.D.

SUMMARY:

Background: Delirious mania is a significant, potentially dangerous, and difficult to recognize psychiatric entity. The clinical picture is generally one of rapid onset of delirium and mania, where no organic cause is identified. Case series have described a set of behaviors suggestive of this syndrome, but it lacks formal diagnostic criteria. It is important to recognize this syndrome to avoid potentially dire consequences. **Case:** Mr. D. was a 56-year-old man with a history of bipolar I disorder, previously maintained on carbamazepine. He was admitted to a psychiatric hospital with hypomanic symptoms, including irritability, racing thoughts and decreased need for sleep, in the setting of discontinuation of his medication two weeks prior. Standard admission labs and a carbamazepine level were drawn, and carbamazepine was restarted. Mr. D.'s symptoms persisted, despite a supratherapeutic carbamazepine level. On day four, lurasidone was started as an adjunct mood stabilizer. On day eight, his mental status acutely decompensated with emergence of erratic behavior (e.g., bathing fully clothed, blocking the toilets with paper, urinating in his room) and aggression, with intact orientation. Lurasidone and carbamazepine were discontinued. Mr. D. exhibited a state of variable restlessness, hyperactivity and purposeless movements. On day nine, he began to walk around the unit naked. Standard encephalopathy and autoimmune laboratory work was negative, except for elevated CRP. Head CT and brain MRI were unremarkable. By day 18, Mr. D had decompensated further, with variable disorientation to date and place and intermittent incontinence. He showed no clinical response to trials of valproic acid, aripiprazole and olanzapine. Quetiapine monotherapy was initiated. His insomnia and agitation persisted, and he made bizarre comments, such as claiming to be underwater. After considering alternate diagnoses, lorazepam was added and increased to 6mg/day. Mr. D. appeared calmer, with improvement in orientation and memory and cessation of erratic behaviors. Over several days, he was ready for discharge to outpatient care on quetiapine and lorazepam. **Discussion:** Mr. D. was initially diagnosed with a manic relapse, but decompensated despite multiple trials of antipsychotics and mood stabilizers. We thus considered alternate diagnoses, such as infection and encephalopathy. As tests for these were all negative, we considered delirious mania, an uncommon diagnosis that can be associated with frequent disrobing and incontinence, with disturbances of attention, awareness and orientation, which are usually characteristic of delirium. Symptom resolution began after starting lorazepam, which has also been reported by others. This syndrome should be considered in patients with apparent delirium and mania who have negative evaluations for encephalopathy in order to prevent progression to life-threatening complications of this illness.

NO. 89

BORDERLINE PERSONALITY DISORDER IN THE GERIATRIC PATIENT: REMISSION AND RELAPSE

Lead Author: Benjamin O. Klass, M.D.
Co-Author(s): Charlotte Roy, Julie Penzner, M.D.

SUMMARY:

Borderline personality disorder (BPD) is a condition marked by instability of self-image, interpersonal relationships and affect. Abrams and Bromberg theorize that BPD has a period of dormancy in middle adulthood, when life changes in relationships or employment are less common. We feel that there

is a dearth of literature exploring re-emergence of BPD in the elderly, when increased dependence and dwindling social resources can lead to decompensation. C.C. was a 76-year-old Caucasian woman living at an assisted living facility (ALF) with declining health. C.C. had a history of childhood physical, emotional and sexual abuse. C.C. reported a lifetime of tumultuous interpersonal relationships, with two ex-husbands and two sons, none of whom she would permit to be closely involved in her care. During admission, C.C. was devaluing of staff and of her care, with frank splitting behaviors. C.C. did not improve with optimized antidepressants, and she refused antipsychotics. When discharge options were discussed, she often stated that discharge would make her suicidal. Though limited in time span, longitudinal studies of BPD offer some insight into the course of the disorder. The Collaborative Longitudinal Personality Disorders Study found that 10% of BPD patients remitted within six months, and >50% remitted within two years. A 2006 study found that >50% of patients remitted within the first four years, and 88% of patients remitted within 10 years. Relapse was not addressed in these studies. Our case shows how borderline traits, better controlled in middle adulthood, can re-emerge. C.C. was intelligent and functional in adulthood, only becoming acutely impaired in later life, when circumstances elicited the underlying borderline traits. This case, along with several other discussed cases, provides evidence that BPD most likely remits and relapses in response to life stressors and challenges the conventional definition of personality disorders as stable throughout life. As aging individuals with BPD face a decline in their health and a consequent loss of independence, this may exacerbate chronic fears of rejection. Physicians should be aware of the possibility of BPD in difficult patients, even without a prior BPD diagnosis. Further research is needed on optimal treatment options for geriatric patients with BPD.

NO. 90

EDUCATING A GERIATRIC PATIENT ABOUT SOMATIC SYMPTOM DISORDER: A RESIDENT'S CHALLENGE

Lead Author: Kavita Kothari, M.B.B.S.
Co-Author(s): Luisa Gonzalez, M.D., Ronak Patel, M.D., Daniel Roman, M.D., Andrew M. Schwartz, B.A.

SUMMARY:
Headache is a common neurological symptom that, if left untreated in some patients, may precipitate the development of depression and suicidal ideations. Individuals with Somatic Symptom Disorder (SSD) typically have multiple somatic symptoms that are distressing or result in significant disruption of daily activities. Here we present a case of a 59-year-old woman with no prior psychiatric diagnosis who presented to the CPEP (Comprehensive Psychiatric Emergency Program) due to ingestion of an excessive amount of aspirin in an attempt to relieve her pain. Weeks prior, she had also taken an excessive amount of aspirin for pain, but the patient denied having depression or suicidal ideations, attempts or plans. Despite counseling, the patient refused to accept psychiatric care during her first hospitalization and, providing education, became more challenging during her second admission. This case aims to illustrate the difficult scenario clinicians face to educate elderly patients about SSD, and a discussion of treatment plan strategies used to provide safe discharge and avoid fatal consequences will be reviewed.

NO. 91

MINIMAL HEPATIC ENCEPHALOPATHY PRESENTING AS PSYCHOSIS

Lead Author: Kristina E. Kurtz, D.O.
Co-Author(s): Maria Villafuerte, D.O.

SUMMARY:
Minimal hepatic encephalopathy (MHE) is a complication of chronic liver disease that can manifest with psychiatric symptoms, often making MHE difficult to distinguish from other psychiatric presentations. **Case:** A 55-year-old female with end-stage liver disease presented to her primary care physician with electrolyte abnormalities, hyperammonemia and bizarre behavior. She was thus medically treated for ten days prior to an inpatient psychiatric admission. She endorsed paranoid delusions and was hyperverbal with loose associations. A Montreal Cognitive Assessment (MoCA) revealed deficits in executive function, recall and response inhibition summating to a score of 20/30. (Scoring less than 26 indicates impairment.) She was treated with a gradual titration of ziprasidone until a therapeutic dose was reached. Nevertheless, she continued to display varying levels of psychosis along with a progressive decline in cognitive functioning. She required assistance for all activities of daily living—including dressing and toileting. A further review of her history revealed no previous psychiatric history. Still, a decline in her level of functioning over the previous four months was apparent. This was in the context of

noncompliance with lactulose, along with other home medications. Ziprasidone was tapered, and treatment for hepatic encephalopathy was optimized with lactulose and rifaximin. After several weeks, she had total resolution of her psychotic symptoms along with a stark improvement in executive functioning and ability to care for herself, yet she continued to display deficits in memory recall and response inhibition. This seemed to represent her previous cognitive baseline. **Discussion:** MHE may present with psychiatric disturbances including decreased inhibition, anxiety, apathy and paranoia. Current research indicates that specific cognitive tests are the best way to assess for MHE. Traditional paper examinations are often impractical for use in clinical practice. A new study has validated that a smartphone version of the Stroop Test, easily accessible to current practitioners, is an equally effective measure to assess for MHE. As illustrated, this case demonstrates the importance of obtaining a thorough history while utilizing innovative methods to assess cognitive functioning. This assists the modern practitioner in obtaining a broad differential and, as such, an accurate diagnosis. Recognition of MHE in patients such as these is crucial, as the lasting cognitive effects often lead to a poor prognosis when not properly treated.

NO. 92

COPROLALIA AS A PRESENTATION OF SEVERE APHASIA STATUS POST-CVA: A CASE REPORT

Lead Author: Audrey La Noce, D.O.
Co-Author(s): Dr. Steven Moskowitz, M.D.

SUMMARY:

Coprolalia comes from the Greek κόπρος, (kopros) meaning “feces” and λαλιά (lalia), from lalein,”to talk." **Case:** This case discusses a a very uncommon presentation of aphasia in a 45-year-old unmarried White male with a three-year-history of depression and CVA who presented to the hospital with acute suicidal ideation. Before his stroke at the age of 42, he had no impairments in his verbal or intellectual functioning, was able to hold a steady job and did not have any significant psychiatric history. Upon interview, it was found that he was experiencing significant aphasia where the only words he could say were “I,” “fuck,” “oh” and “am." He was able to comprehend the questions being asked of him as indicated by the fact the he was able to use nonverbal communication to respond appropriately to questions. When he attempted to verbally respond, however, he was only able to say those four words in different combinations, often with great effort. Through the course of the interview, it was discovered that he was having significant impairment of his social and occupational functioning due to his aphasia because it was difficult for him to function in public where most people would not know about or understand his condition. He did have some limited ability to write, and he reported having security called on him numerous times and was removed from several different places for inappropriate language, even though he endorsed being calm and cooperative at the time. He had limited social and family support, which made it even more difficult for him to maintain a satisfying life. **Discussion:** This case is an important example of why the mental and medical health care systems need to have a comprehensive and assertive community approach to treating patients with severe functional impairment to prevent further decline of social and occupational functioning.

NO. 93

DOUBLE TROUBLE: A CASE OF KLEINE-LEVIN SYNDROME IN AN ADOLESCENT FEMALE AFTER A ROAD TRAFFIC ACCIDENT

Lead Author: Jasmin G. Lagman, M.D.
Co-Author(s): Katherine Napalinga, M.D.

SUMMARY:

Background: Road traffic accidents are common and are a threat to our pediatric population. Children who have experienced a traumatic event, including car accidents, are at risk of significant psychological distress. Long-term dysfunction may result if psychological needs are not identified and addressed. This case describes an adolescent female who developed Kleine-Levin syndrome shortly after a school bus accident and continued to present with emotional issues four years later. **Case:** KD, a 15-year-old adolescent female with a history of suicide attempt a year ago, was seen on her third hospitalization for self-harm behaviors. She was suffering from anxiety and depression and was on fluoxetine (SSRI) for a year. She did not have any past psychiatric history until she was 11 years old, when she had a concussion following a school bus accident. A few days later, she was hard to wake up in the morning. She progressively deteriorated and was sleeping most of the time. She had several episodes within two years where she became nonverbal and unable to do her basic ADLs. When

she was awake, she would crawl on the floor and eat a lot. In between episodes, the patient couldn't remember what transpired. She developed auditory and visual hallucinations and paranoia when placed on modafanil. She was put on a life skills program. Her treatment was mainly focused on the sleeping problems until she was diagnosed with Kleine-Levin syndrome two to three years after the accident. At that time, she already presented with some improvement in her neurological deficits. She has been "episode-free" for the past two years but continued to struggle with symptoms of depression and anxiety. **Discussion:** Klein Levin syndrome belongs to the group hypersomnia of central origin. One of the possible causes of this illness is a post-traumatic head injury. During the episode of hypersomnia, the patient can present with voracious eating, hypersexuality, disinhibited behaviors, aggression, disorientation, confusion and hallucination. It may be mistaken for a primary psychological disorder due to the mixed manifestation of symptoms of neurological illnesses and psychiatric disorders. KD was mainly treated for her neurological problem, but PTSD was not addressed. The presence of PTSD symptoms in children after traumatic injury is very high and may be masked by emergence of medical comorbidities; thus, full recovery is hindered. Those who are working with children who had trauma are encouraged to do PTSD screening for appropriate treatment and referral.

NO. 94

MALIGNANT CATATONIA IN A PATIENT WITH HYDROCEPHALAS RESPONSIVE TO ELECTROCONVULSIVE THERAPY (ECT)

Lead Author: Hank Lai, M.D.
Co-Author(s): Alexis Seegan, M.D., Keeban Nam, M.D., Larry Faziola, M.D.

SUMMARY:
Catatonia is a syndrome of motor dysregulation with an inability to have meaningful interaction with external forces. The pathogenesis of catatonia is poorly understood, and its etiologies include psychiatric, medical, neurologic and drug-induced disorders. This case report illustrates a 49-year-old male with no psychiatric history and a medical history significant for hydrocephalus status post-VP shunt complicated by shunt malfunction who experienced profound catatonic deterioration that culminated in hospital admission for rigidity, posturing, waxy flexibility, stupor, mutism and cessation of all oral intake. The patient was unresponsive to all pharmacological therapies, including high-dose benzodiazepines. He demonstrated a robust response to electroconvulsive therapy and was able to regain a significant degree of mental and physical function that improved his overall quality of life. His case emphasizes the importance of considering catatonia related to medical conditions in a patient with stupor, mutism and rigidity and that electroconvulsive therapy is a safe and efficacious treatment method for catatonia of medical etiology.

NO. 95

WITHDRAWN

NO. 96

TESTIMONIAL THERAPY IN LATIN AMERICAN SURVIVORS OF INTIMATE PARTNER VIOLENCE: IMPLICATIONS FOR THE APPLICATION OF A TRANSCULTURAL THERAPEUTIC RITUAL

Lead Author: Pooja Lakshmin, M.D.
Co-Author(s): Veronica Slootsky, M.D., Jessica C. Lopez, M.A., N.C.C., Peter Polatin, M.D., M.P.H., James Griffith, M.D.

SUMMARY:
Objective: Through this poster presentation, attendees should be able to acquire new knowledge about the novel application of testimonial therapy as a therapeutic ritual that has been adapted to facilitate recovery of three Latin American female survivors of domestic violence while also gaining knowledge about how to apply therapeutic techniques across cultures. **Background:** Testimonial therapy is a therapeutic ritual for facilitating the recovery of survivors of human rights violations, including torture and other types of trauma. It is a political/trauma recovery process originally developed in Chile to aid community reintegration of torture survivors. In this poster, we describe how testimonial therapy has been adapted to facilitate recovery of three female Latin American survivors of domestic violence. **Methods:** The three female patients, all of Latin American descent, were treated as part of a community clinic in Northern Virginia affiliated with our George Washington University Adult Psychiatry program. The patients participated in the process of testimonial therapy, including guided trauma narrative sessions and culminating in a Latin American Catholic-inspired delivery ceremony in their Spanish-speaking women's domestic violence group. **Results:** Using written

feedback from our three testimonial participants and visual accounts of the culturally specific "delivery ceremony" booklet, we explore the qualitative and experiential effects of collective testimony and the survivors' narrative in a culturally symbolic Latin American environment. We highlight the profound way in which spoken and written narrative record, through culturally specific reintegration and ceremony, can aid broad-based healing and recovery for survivors of domestic violence. **Conclusion:** Through the application of this therapeutic ritual, we are able to foster resilience and hope in traumatized patients. This process seems to be aided by the capacity to make meaning out of the survivor narrative, to reduce internalized stigma and shame, and to re-establish community acceptance after violation. In this discussion, we assess the broad-based questions that arise when transporting a therapeutic tool across cultures and seek to answer the question of how validity is considered transculturally.

NO. 97

TOPIRAMATE-INDUCED PSYCHOSIS

Lead Author: Camilo Leal, M.D.
Co-Author(s): Andrew Pierce, M.D., Jennifer Davis, D.O., Tessy Korah, M.D.

SUMMARY:

Background: Psychosis is an abnormality defined by delusions, hallucinations, disorganized thinking, deranged motor behavior and negative symptoms. Though most commonly associated with psychiatric disorders like schizophrenia, psychosis is not necessarily the result of a psychiatric disorder and must be diagnosed by exclusion. Patients with new onset psychosis require an extensive medical evaluation to exclude possible explanations for their symptoms. One possible etiology for the onset of psychosis is ingestion of a substance that produces the symptoms. The substances can range from environmental agents to medications or recreational drugs. Clinical studies have shown the onset of acute psychosis induced by topiramate. Dosages have ranged from 50 to 400mg/day. The psychotic symptoms resolved quickly after discontinuation. It is essential that physicians prescribing topiramate are aware of its potential to trigger psychotic symptoms even in patients with no prior psychiatric history. **Case:** Ms. M., a 66-year-old Caucasian female, presented to an inpatient psychiatric unit with symptoms of psychosis including auditory, visual and tactile hallucinations, as well as delusions and paranoia. The patient reported hearing voices, feeling "lasers go through her head," fear of "hammers hurting her" and intense mistrust of family members. Ms. M. reported no prior psychiatric history. Her past medical history included temporal lobe epilepsy. The patient indicated experiencing symptoms shortly after initiating treatment with topiramate. Initially, symptoms included hallucinations of "ant people" and delusions leading her to "pray for intergalactic peace." Prior to Ms. M. voluntarily checking herself into the psychiatric hospital, her neurologist had initiated a cross-taper from carbamazepine to topiramate. This was decided as it was clear that the culprit of the onset of psychotic symptoms was topiramate, as she only began to experience symptoms with the initiation of this medication. The cross-taper was continued, and how her psychosis progressed was monitored. While in the hospital, she continued to experience auditory and visual hallucinations that included seeing cats in her room, seeing knives and seeing gashes and multiple cuts throughout her arms. The severity of the hallucinations appeared to decrease as the cross-taper was advanced. After completing the discontinuation of the topiramate, the patient's symptoms of psychosis resolved, and the decision was made to discharge. **Conclusion:** This case of topiramate-induced psychosis illustrates a specific medication that can precipitate such symptoms. The documentation of this case is imperative to further expand upon the scant reports of such situations and be able to provide support and insight when needed. Further research is paramount for topiramate-induced psychosis as well as for physicians prescribing topiramate to be cognizant of this phenomenon.

NO. 98

MAKING THE COVERT OVERT: FINE GRAIN ANALYSIS OF MEDICATION HISTORY CAN REVEAL EFFECTIVE TREATMENTS, RECOGNIZE PROBLEMS AND IMPROVE CARE

Lead Author: Jacob Leivent, M.D.

SUMMARY:

Since 1989, New York State has kept records of all patient-related pharmacological treatment information, including medications prescribed to individuals in New York State's 26 adult, child and forensic state psychiatric inpatient facilities. These records are a part of the Pharmacy Service and Clinical Knowledge Enhancement System Project,

PSYCKES. This information serves both administrative and clinical purposes. PSYCKES provides clinicians with additional sources of information concerning medication use over the course of an individual's state psychiatric center hospitalization. As it is typically used, PSYCKES offers a broad overview of a patient's pharmacological treatment, the medications prescribed, the doses offered, and the length and adequacy of medication trials. This data is organized such that one may obtain a broad overview of a patient's treatment. At Kingsboro Psychiatric Center, we have developed methods that permit us to download and organize this data in a manner that allows us to analyze a patient's medication treatment and response in a highly detailed, fine-grained manner. All medications that a patient receives are downloaded into Excel spreadsheets. This information is then sorted and labeled based on each medication and the duration of medication use. This information is further arranged based on broad treatment classes, e.g., antipsychotic, anxiolytic, mood stabilizer, antidepressant, adverse effect treatments and so forth. Finally, the medications are displayed in temporal sequence while indicating duration of use. A major component of these analyses is based on a patient's need for and use of PRN medication. At Kingsboro, PRN medications can only be prescribed and given to the patient at the time that they are need. There are no standing PRN orders. Thus, PRN medication use is an indirect measure of patient medication response; patients who are doing well typically do not require PRNs, but patients who continue to have behavioral disturbances often require and receive PRNs. Medications that are ineffective or have negative pharmacokinetic and/or pharmacodynamic interactions or that cause covert adverse or toxic effects can, in many cases, result in an increased use of PRN medication. A review of the history of medication and response can make these factors evident. This is particularly true for episodes of violence, where pharmacological interventions are quite common. Likewise, medication regimens associated with periods of quiescence and discharge imply improved efficacy and function and are characterized by minimal use of PRN medication. This historical medication response record can be examined in a highly detailed way over the course of multiple hospitalizations over several years. Thus, ineffective or harmful medication regimens and/or combinations can be avoided as one searches for or returns to effective medication treatment.

NO. 99

THE IMPACT OF HIGH EXPRESSED EMOTION AND THE ENVIRONMENT ON TWINS WITH THE DEVELOPMENT OF PSYCHOSIS IN ONE

Lead Author: William Levitt, M.D.
Co-Author(s): Natalie Seminario, M.S., M. Navaid Iqbal, M.D.

SUMMARY:
We report a case of a 19-year-old Caucasian female with a history of high expressed emotion with no known past psychiatric history who presented to the emergency room with complaints of persecutory delusions, worsening over the last year, that her parents and teachers were against her and preventing her from graduating high school. This culminated to the point where she unexpectedly began screaming and running around naked in her backyard, became physically aggressive toward her mother and was brought to a psychiatric emergency room. The effect of nature versus nurture as the cause of mental illness has long been debated. While it is clear that an inherited genetic predisposition exists along with identified risk factors, the direct cause of onset of psychosis is not yet fully understood. This case will highlight a pair of twins exposed to parents with high expressed emotion that resulted in different psychiatric outcomes—one living a healthy life without psychiatric issues and the other developing paranoid delusions and a first-break psychotic episode. Studies show that a variety of environmental factors, such as history of physical or emotional trauma, infections, substance abuse and obstetric complications, are associated with the early onset psychosis. The twins were exposed to an environment of high expressed emotion—one of criticism, hostility, emotional overinvolvement, negative remarks and lack of warmth. Both sisters experienced a lifetime of verbally and physically aggressive parents who were occasionally emotionally overinvolved and lacking warmth. The patient was likely negatively compared to her more successful sibling and developed feelings of self-doubt and low self-esteem, which are associated with and may have heralded the onset of her paranoia. Further research is necessary to better understand the effect of high expressed emotion on the development of paranoia and psychosis.

NO. 100

A TALE OF TWO BROTHERS: PSYCHOSIS, SUICIDALITY, HOMICIDALITY AND SUBSTANCE ABUSE

Lead Author: William Levitt, M.D.
Co-Author(s): Emily Rosenfeld, M.S..

SUMMARY:
It is well known that there is a genetic component to mental illness. We have made great strides in identifying genetic and environmental contributions to many common diseases, but much is still unknown. To our knowledge, this is the first case study showing such an extensive history of siblings with the same psychiatric diagnoses—particularly psychosis, suicidality, homicidality, substance abuse and possible antisocial traits. We present the case of two Caucasian brothers ages 25 and 27 who have many similarities in their psychiatric histories. They both have a history of schizoaffective disorder, bipolar type. Additionally, they both struggle with substance abuse, particularly alcohol and cannabis. They have both had multiple inpatient psychiatric hospitalizations going back to childhood due to a history of multiple suicide attempts, homicidal ideation and physical aggression. Family history is significant for a mother with unspecified mental illness (likely schizophrenia), suicide and alcohol abuse. Lastly, they have long legal histories with multiple incarcerations. Studies have shown concordant schizophrenia in 10% of dizygotic twins and 50% genetic susceptibility for alcohol abuse. Furthermore, studies have shown that those with substance use disorders were at significantly higher risk of violent criminal activity—up to a threefold increase. Studies have also estimated suicidal behavior to have a 30 – 50% heritability, independent of psychiatric diagnoses. This brings up the perpetual question of environmental versus genetic contributions—nature versus nurture—as to the causality of mental illness. Our aim is look further into the genetic component and demographics of mental illness, as well as the involvement of environmental factors. This case is unique due to the multiple, similar comorbidities of these two brothers who spend little time together and have lived apart for a number of years. Our ability to screen for and provide early intervention is limited due to our incomplete understanding of the genetic components of these multiple psychiatric comorbidities. Further research is needed to better understand familial psychiatric and substance abuse disorders.

NO. 101

A CURIOUS CASE OF CAPGRAS: THE PSYCHODYNAMIC AND NEUROCOGNITIVE APPROACHES TO CAPGRAS SYNDROME

Lead Author: William Levitt, M.D.
Co-Author(s): Ethan Isidro, M.S..

SUMMARY:
Capgras syndrome is a psychiatric disorder in which the patient has the delusional belief that closely related persons (family member, spouse, friend, etc.) have been replaced by impostors. The first case was reported by Joseph Capgras and Jean Reboul-Lechaux in 1923. Since then, numerous cases of Capgras syndrome have emerged with varying etiologies, symptoms and levels of severity. While the pathophysiology of Capgras syndrome is unknown, there are two major theories of explanation. The psychodynamic model proposes that the delusion is a means to cope with ambivalent emotions felt toward the person being duplicated. The neurocognitive approach explores the possible impairment of the frontal and/or temporal lobes, as well as a disconnect between right and left hemispheres, which affects patients' ability to recognize a person despite appropriately processing their face. Capgras syndrome is most commonly associated with primary psychiatric disorders, predominantly schizophrenia. However, it has also been found to be associated with numerous neurological conditions including Lewy body dementia, brain trauma and even Parkinson's disease. OBJECTIVES: To explore the mechanism behind Capgras delusion and how to optimize psychopharmacological and therapeutic interventions. **Case:** A 22-year-old Hispanic male with a history of schizoaffective disorder bipolar type was brought into the ED after he was found wandering the streets by police. The patient believed he was homeless and that both of his parents died years ago, both in an MVA, and that he was living with a family of identical imposters who were attempting to poison him. His delusion worsened as he escaped to the streets and became noncompliant with medications. **Conclusion:** Capgras syndrome is a condition that, although rare, should be highlighted due to its wide variety of etiologies, manifestations and unique treatment adjuncts. It is important that patients with Capgras syndrome are evaluated and treated with both a psychodynamic and a neurocognitive mindset in order to progress toward a more balanced union between both schools of thought.

NO. 102

A CASE OF SERTRALINE-INDUCED VAGINAL HEMMORHAGIA

Lead Author: William Levitt, M.D.
Co-Author(s): Carmen Leung

SUMMARY:

Selective serotonin reuptake inhibitors (SSRIs) are the preferred treatment for many psychiatric disorders—including depression, obsessive-compulsive disorder (OCD), panic disorder and post-traumatic stress disorder (PTSD)—due their relative safety compared to other antidepressants and their broad indications. It has been shown that SSRIs that have a high degree of serotonin reuptake ability result in abnormal bleeding. Only a few cases connecting the use of sertraline and abnormal vaginal bleeding have been seen. Serotonin (5-HT) becomes a vasoconstrictor in the presence of endothelial damage. It is released by the dense granules of platelets and activates 5-HT2A receptors, enhancing the aggregation process. SSRIs decrease serotonin levels in plasma, leading to decreased serotonin levels in platelets. We present a case of a 39-year-old Hispanic female with a history of anxiety disorder not otherwise specified (NOS), mood disorder NOS and PTSD, who was prescribed sertraline 25mg daily for one week with an increase in dosage to 50mg daily for the next week. The patient presented to the emergency department four days after initiation of the higher dosage with severe vaginal bleeding and was hospitalized. Her sertraline was decreased from 50mg to 25mg daily, and the bleeding subsequently stopped. While it is understood that serotonin plays a role in platelet aggregation, it is not fully understood how serotonin plays a role in bleeding specifically in vaginal mucosa. We aim to explore this mechanism and how best to optimize the psychopharmacological treatment.

NO. 103

EARLY RECOGNITION OF TRICYCLIC ANTIDEPRESSANT OVERDOSE: A CASE REPORT

Lead Author: Kevin J. Li
Co-Author(s): Mohammad Javed, M.D., Charles H. Dukes, M.D., Britta Ostermeyer, M.D., M.B.A.

SUMMARY:

Tricyclic antidepressants (TCAs) are commonly used to treat a number of disorders, including neuropathic pain, major depressive disorder, obsessive-compulsive disorder and others. The development of new antidepressant medications has reduced the use of TCAs, but the incidence of TCA overdose remains significant, representing the seventh leading cause of toxic exposures in 2008. This case presentation identifies not only classic presenting symptoms of TCA overdose but also commonly overlooked early signs and symptoms, including early EKG changes. A review of initial presenting symptoms and laboratory/EKG findings aids in the early recognition of TCA overdose in the non-ER/EMT setting.

NO. 104

DECODING DETOX: TROUBLING INTERACTIONS BETWEEN ARIPIPRAZOLE AND OVER-THE-COUNTER DIETARY SUPPLEMENTS

Lead Author: Max A. Lichtenstein, M.D.
Co-Author(s): Rafik Sidaros, M.B., B.Ch.

SUMMARY:

Aripiprazole is a widely used atypical antipsychotic, FDA approved to treat schizophrenia, bipolar mania and treatment-resistant major depressive disorder. It exerts its effect by partially antagonizing the D2 and fully antagonizing the 5-HT2A receptors. Aripiprazole has 87% bioavailability when taken orally, with no interactions with foods or gastric pH-altering medications listed on the FDA insert. We present a case of a 52-year-old female who became acutely psychotic after staring a dietary supplement “bentonite clay." She had been stable on aripiprazole monotherapy for 10 years to treat her diagnosis of schizophrenia, paranoid type. We postulate the acute psychotic episode was due to the decreased bioavailability of aripiprazole due to the interaction between bentonite and the medication. Bentonite clay is marketed as a “detoxifying agent,” and claims vary from providing “healing powers” to “weight loss” and “system cleansing." Sodium, potassium and calcium bentonite are commonly occurring clay compounds that have long been used in commercial water treatment. When suspended in solution, it binds to industrial dyes and pesticides, removing them from the solution. Most of these compounds are large organic, aromatic molecules similar to aripiprazole. This has wider implications regarding the need for providers to be aware not just of medication-medication interactions but of interactions between prescribed medications and over-the-counter dietary supplements. These are easily accessible and commonly available to our patient populations, with

little to no regulation on their marketing and their claims of health benefits.

NO. 105

CITALOPRAM AND ESCITALOPRAM: ADVERSE CARDIAC OUTCOMES IN MEDICALLY ILL INPATIENTS

Lead Author: Artin Mahdanian, M.D.
Co-Author(s): Dominique Elie, Saeid Noohi, Andre Do, Ching Yu, Marilyn Segal, Karl Looper, Soham Rej

SUMMARY:
Background: The U.S. Food and Drug Administration (FDA) released a safety communication in 2011–2012 regarding citalopram and escitalopram and their increased risk of QTc prolongation and adverse cardiac outcomes. However, whether citalopram/escitalopram is associated with cardiac outcomes in acutely medically ill inpatients, who may be particularly vulnerable, has yet to be assessed. **Methods:** We performed a retrospective cohort study including 275 medically ill inpatients randomly selected out of all 923 patients assessed by the psychiatric consultation-liaison (C-L) team between 2008 and 2014 at the Jewish General Hospital, Montreal, Canada. Patients were followed from the date they were first assessed by the C-L team to a maximum of 30 days. They were divided into three exposure groups: 1) citalopram/escitalopram (C/E), 2) other antidepressants (ADs), or 3) no antidepressants (non-AD). The groups were then statistically compared in terms of adverse cardiac outcomes. **Results:** Of the 275 medically ill inpatients, 89 (32.4%) were exposed to C/E, 74 (26.9%) to other ADs and 112 (40.7%) to no antidepressant. No adverse cardiac outcomes (ventricular arrhythmias or sudden cardiac deaths) were observed in the C/E group, comparable to results observed in the other groups (C/E 0% vs. other ADs 0% vs. non-AD 4.9%, ç‡2(2)=7.85 p=0.02, no significant post-hoc Bonferroni pairwise differences). The incidence of QTc prolongation (QTc ≥500 ms or increase in QTc ≥60 ms) (C/E 5.3% vs. other ADs 5.3% vs. non-AD 11.1%, ç‡2(2)=0.42 p=0.81) and the mean change in QTc (two EKGs available in n=47) (C/E 2.48 ms vs. other ADs 7.15 ms vs. non-AD 7.89 ms, F(2, 45)=1.25 p=0.30) did not differ between groups. **Conclusion:** Our study suggests that citalopram and escitalopram are not associated with adverse cardiac outcomes in acutely medically ill inpatients. With cautious prescribing, it appears that clinicians can safely use these SSRIs in many medically ill inpatients when the benefits outweigh the risks.

NO. 106

PULMONARY EMBOLISM IN CATATONIA: ASSESSING RISK IN SPECIFIC POPULATIONS IN THE INPATIENT SETTING: A CASE REPORT

Lead Author: Mario Mangiardi, M.D.
Co-Author(s): Swaminathan Thangaraj, D.O., Mitali Patnaik, M.D., Thambipillai Sureshkumar, M.D., Wei Du, M.D.

SUMMARY:
Catatonia includes motoric immobility, profound negativism, waxy flexibility and mutism occurring over a broad spectrum of psychiatric and medical conditions. A severe complication of catatonia is the development of venous thromboembolism (VTE) resulting in pulmonary embolism (PE). Routine early VTE prophylaxis such as anticoagulation might be warranted when identifying high-risk populations to reduce mortality and morbidity. In the following two cases, patients developed pulmonary embolism after protracted catatonia. The highlighted risk factors include immobility, female sex, childbearing age, Jamaican nationality, obesity, hypertension, poor oral intake and use of antipsychotic medications. Patient A is a 39-year-old Jamaican female with a history of schizophrenia, hypertension and obesity. She was admitted for delusion, religious preoccupation and inability to care for herself. She exhibited catatonic symptoms such as stupor, mutism, catalepsy, waxy flexibility and negativism. She completely refused antipsychotics and lorazepam and PO intake/fluid on the psychiatric unit. Such refusal resulted in severe dehydration and potential metabolic derangement. Subsequently, she was transferred to the emergency room for medical evaluation. She was given IV fluids, and electrolyte imbalances were corrected with significant improvement in catatonia. However, after returning to the psychiatric unit, she began to regress back to catatonia with hypernatremia, hyperkalemia and elevated creatine kinase (2462U/L), leading to the patient being readmitted to the medical hospital, where she was found to have a massive bilateral pulmonary embolism. Patient B is a 40-year-old Jamaican female with a history of schizoaffective disorder, urinary tract infection, hypertension and obesity who was admitted involuntarily for aggressive and psychotic behavior. She was catatonic and mute with periods of aggressive behavior such as attacking staff, yelling religious language such as “Jesus, Jesus” and disobedience. In addition, she failed to respond to the combination of

adequate doses of aripiprazole, risperidone and lorazepam. Furthermore, she began to refuse PO intake and became increasingly isolated, mute and sedentary, lying on the floor for extended periods of time. She was transferred to the emergency room for evaluation and was found to have a pulmonary embolism. In the inpatient setting, careful attention must be placed on patients with catatonia by assessing risk factors and providing prophylaxis either through medication or mechanical prophylaxis. These patients were middle-aged, obese females from Jamaica being treated for catatonia with the same antipsychotic and anxiolytic medications. In addition, both patients had an ongoing infectious process combined with hypertension and poor PO intake. The two patients being discussed shared multiple characteristics that might warrant further investigation for increased risks of PE in the inpatient psychiatric setting.

NO. 107

A CASE REPORT OF MANIA IN A PATIENT DURING ARIPIPRAZOLE TREATMENT

Lead Author: Adeyemi Marcus, M.D.
Co-Author(s): Adefolake Akinsanya, M.D., Lendita Haxhiu-Erhardt, M.D.

SUMMARY:

Background: Aripiprazole is a second-generation antipsychotic that has been approved for treatment of schizophrenia and acute manic and mixed episodes of bipolar disorder and adjunct treatment of depressive disorder, irritability associated with autism spectrum disorder and Tourette's disorder. Aripiprazole's mechanism of action is unique, as it is an antagonist at 5-HT2A receptors and a partial agonist at D2 and 5-HT1A receptors. This unique pharmacological profile could explain seemingly contradictory indications for both manic and depressive episodes. Notably, at low doses, aripiprazole functions more like a partial agonist, while at high doses, it functions more like an antagonist. This suggests that, at low doses, it is likely to induce mania/hypomania despite its FDA approval. **Methods:** We present a case report of a patient who was admitted for decompensated schizophrenia and developed mania during a high-dose aripiprazole treatment while on the inpatient unit. We also reviewed the literature to better understand the hypothesis behind this. **Results:** Our literature search revealed several published case reports of patients who developed mania/hypomania while being treated with aripiprazole. Most of the reported cases were hospitalized patients with no prior history of mania/hypomania. Padala et al. hypothesized that combined antagonism of 5-HT1A and partial agonism of D2 receptors could cause frontal dopamine release, contributing to manic symptoms. Traber et al. also hypothesized that chronic exposure to D2 antagonist secondary to use of antipsychotics to treat schizophrenia can lead to patients being accustomed to dopamine blockade such that exposure to a partial agonist, aripiprazole in this case, could have resulted in a state of relatively high dopamine activation, thus a contributor to mania. Some authors also reported cases of mania/hypomania following low-dose aripiprazole, while others reported same symptoms with higher doses of aripiprazole. **Conclusion:** Paradoxical reaction in which a medication causes the opposite of its intended effects is not unheard of with psychiatric medication. The exact mechanism of this paradoxical reaction is unknown; however, opposing agonist and antagonist actions at the D2 receptor at different doses could account for this paradoxical reaction. Further research would be beneficial to determine factors that may predispose individuals to developing this unusual reaction. It will benefit us as clinicians to be aware of the rare potentials of prescribed medications, such as, in this case, the rare potential of aripiprazole to induce manic episodes.

NO. 108

A BAD TRIP FROM "THE BOMB": A CASE REPORT

Lead Author: Gloria Martz, D.O.
Co-Author(s): William Tankersley, M.D.

SUMMARY:

Synthetic drugs have become increasingly prevalent in the adolescent population. The Internet has made these substances widely available for purchase. 25I-NBOME, or "N-bomb," became available for purchase on the Internet in 2010, and since then, multiple hospitalizations and some deaths have been reported related to use of this substance. 25I-NBOME is a psychoactive substance that acts as a 5-HT2 agonist. We present the case of a 15-year-old male admitted to an adolescent inpatient psychiatric hospital. The patient reported prior use of this substance, which caused a "bad trip" of vivid hallucinations and psychosis. The patient had many continued effects from this substance, including re-experiencing of the hallucinations and nightmares. This case report focuses on the epidemiology,

pathophysiology, presentation and management of symptoms caused by use of “N-bomb."

NO. 109

CASE REPORT: IRREGULAR MENSES AND PMS ALLEVIATED WITH THE USE OF BUSPIRONE

Lead Author: Syed E. Maududi, M.D.
Co-Author(s): Neha Rane, M.D., Parveen Gill, M.D., Asghar Hossain, M.D.

SUMMARY:

We present the case of a 42-year-old Caucasian female seen in the clinic for anxiety and depression. The patient has a history of alcohol and opiate abuse and claims to have been sober for two years. She separated from her husband and lost custody of her children due to substance abuse. She is trying to regain custody of her children now that she is sober. The patient was on selective serotonin reuptake inhibitors (SSRIs) for her depression, buspirone 10mg TID was added to her therapy for anxiety. The patient is also seeing an OBGYN for history of “irregular menses” and premenstrual symptoms (PMS) that were unresponsive to conventional therapy. The patient returned to the clinic for a three-month follow-up visit. As per the patient, her menstrual cycle was now regular, and she was asymptomatic for the past two months. The only change in her medication was the addition of buspirone; there was no other notable change in her medical or social history. Women who develop PMS appear to have serotonergic dysregulation that may be triggered by cyclic changes in gonadal steroids. SSRIs are the first-line therapy for women with PMS. Up to 60 to 70% of symptomatic women respond to an SSRI, but 30 to 40% of women do not respond. Some women who do not respond to one SSRI may respond to a second SSRI. Buspirone has been proposed as a treatment option for premenstrual dysphoric disorder (PMDD) based on its serotonergic mechanism of action. Pilot studies suggest possible efficacy, but the benefit of buspirone in PMDD remains unconfirmed. A number of well-designed placebo-controlled studies in the past decade have established several selective serotonin reuptake-inhibiting antidepressants as effective first-line treatments for this disorder. This case is unique, as the patient was on SSRI therapy for her depression and had a concurrent history of PMS and irregular menses. Her symptoms resolved following the continuous administration of buspirone, suggesting a correlation exists.

NO. 110

THE POTENTIAL THERAPEUTIC ROLE OF OXYTOCIN IN AUTISM SPECTRUM DISORDER PATIENTS

Lead Author: Syed E. Maududi, M.D.
Co-Author(s): Neha Rane, M.D., Parveen Gill, M.D., Asghar Hossain, M.D.

SUMMARY:

Autism spectrum disorders (ASDs) are developmental disorders characterized by profound abnormalities in social communication, social interaction and restricted, repetitive patterns of behavior, interests or activities. ASDs affect approximately one percent of children in developing social and verbal communication deficits, stereotypical motor behaviors, restricted interests and cognitive abnormalities. Studies have suggested that oxytocin plays a role in social attachment in experimental animals, in enhancing social interactive ability in human adults, and in the pathogenesis of autism spectrum disorders. Oxytocin is important in a wide range of social behaviors; recent human studies have shown that administration of oxytocin modulates behavior in both clinical and nonclinical groups. One study found that oxytocin administration facilitated the processing and retention of social information in adults diagnosed with autism or Asperger’s disorders. In another study, patients with autism spectrum disorders showed a significant reduction in repetitive behaviors following oxytocin infusion in comparison to placebo infusion. Fifteen children and adolescents participated in a study that administered modified maximum-tolerated doses of intranasal oxytocin. Over 12 weeks of treatment, several measures of social cognition/function, repetitive behaviors and anxiety showed sensitivity to change, with some measures suggesting maintenance of effect three months past discontinuation of intranasal oxytocin. A number of studies suggest that oxytocin likely plays a role in autism spectrum disorders. These studies had no serious adverse event, and reported adverse events were mild to moderate. We speculate that administration of oxytocin in children and adolescents with ASD has potential therapeutic benefits. However further studies are needed to explore the efficacy and safety of oxytocin administration.

NO. 111

DECREASING MORBIDITY THROUGH EARLY DETECTION OF CLOZAPINE-INDUCED CARDIOTOXICITY: A CASE REPORT

Lead Author: Shawn E. McNeil, M.D.
Co-Author(s): Astik Joshi, M.D., Narissa R. Etwaroo, M.D.

SUMMARY:
This case demonstrates how early detection of cardiotoxicity in a patient initiated on Clozapine prevented subsequent morbidity and mortality. Early symptoms can be vague but are important to recognize. This includes closely monitoring vitals, since tachycardia is a common presenting symptom, as shown in this case. Continued treatment with clozapine could have possibly led to myocarditis or cardiomyopathy. In this case, we report on a 37-year-old male with treatment-resistant psychosis initiated on clozapine. The patient demonstrated a characteristic constellation of side effects that were indicative of cardiac compromise due to clozapine initiation. This medication has an effect through a type I IgE-mediated hypersensitivity reaction, which damages myocytes and causes eosinophilic infiltration. Additionally, it may cause cytokine release and increased catecholamines. The resulting cardiotoxicity may result in arrhythmia and sudden cardiac arrest, possibly resulting in death. Therefore, initiation of clozapine necessitates the close monitoring of cardiac functioning. **Case:** A 37-year-old male with a past psychiatric history of schizoaffective disorder voluntarily presented to the ED for punching holes in the walls and “walking stiff." He also requested an x-ray of his head because his “brain” was talking to him. He had recently been discharged on lithium, valproic acid, haloperidol PO and haloperidol decanoate. These medications were restarted, and the patient was admitted to the inpatient unit. During the second month of admission, haloperidol and olanzapine were discontinued due to nonefficacy. Olanzapine was cross-tapered with clozapine. Clozapine was tapered up to 150mg PO BID, and an EKG showed NSR and QTc of 445msec. One week later, the patient was given a haloperidol decanoate injection of 100mg IM, and valproic acid was decreased. Ten days after clozapine was started, the patient developed hidradenitis. Clozapine levels were obtained and were therapeutic. Two weeks after clozapine was started, the patient developed persistent tachycardia, leukocytosis and flu-like symptoms (including low-grade fever, cough, nausea, constipation and later diarrhea), and CXR showed minimal bibasilar pneumonia. On the same day, the patient was also noted to have headache and transaminitis (ultrasound of liver showed hepatomegaly). The patient was given ceftriaxone and azithromycin in response. The flu-like symptoms eventually resolved. Three weeks after clozapine was started, EKGs showed sinus tachycardia, a new right bundle branch block and QTc elevated at 525msec. He was also found to have eosinophilia (relative 21.6% [nl=0 – 5] and absolute 2.4K/uL [nl=0.0 – 0.6]) and elevated cardiac enzymes (Trop >0.06ng/mL, BNP 389pg/mL, CRP >15mg/L). The patient was admitted to the ICU. Clozapine and lithium were discontinued. Within one to two weeks of discontinuing clozapine, leukocytosis, eosinophilia and transaminitis resolved.

NO. 112

DIFFERENTIAL DIAGNOSIS IN PATIENTS WITH PSYCHOSIS: A CASE OF HYPOTHYROIDISM-INDUCED MENTAL DISORDER

Lead Author: Tomas Melicher, M.D.
Co-Author(s): Amanda L. Helminiak, M.D., Joshua Choi, Emily Crain

SUMMARY:
Background: Differential diagnosis for psychotic conditions includes both primary (psychiatric) and secondary causes. Among the most common medical causes of psychosis are metabolic, autoimmune (mainly SLE) and, especially, endocrine diseases. Among the endocrine disorders, thyroid disease and steroid-producing tumors are the most common. All of these, as well as drug-induced psychosis and neurological conditions such as encephalitis, tumors and encephalopathy, must be excluded before diagnosis of a primary psychotic disorder can be made. **Case:** C.L., a 47-year-old female, presented involuntarily at Harris County Psychiatric Center (HCPC) with the chief complaint of “I am under significant stress” due to disorganized behavior. Her psychiatric history was unknown. A mental health warrant was filed by her daughter, which stated that the patient had been talking to herself and her voices; had been threatening and physically abusive; had hit her daughter in the face; wanted to give her belongings away; had been delusional, saying people were trying to impersonate her; had decreased need for sleep; and was roaming the streets aimlessly. She was also noted to be flushing her medication because it was tampered with or poisoned. Upon presentation to HCPC, the patient was alert, paranoid and evasive, stating that she was under a lot of stress and that she needed to get out as soon as possible. She denied all intake information. She repeatedly stated that there were “several things

going on in Conroe," and "for the past 36 to 48 hours, things have been crazy," but she refused to elaborate. Her affect was irritable; she denied any suicidal ideations. She grew more irritable when asked about substance abuse. Her past medical history was positive for hypothyroidism. She stated that she only takes ibuprofen for back pain and has not taken levothyroxine in "years." She admitted to having taken divalproex for stability when she was pregnant with her son and has not taken any since. She endorsed having taken duloxetine prescribed by her PCP for anxiety. The patient refused any medication and repeatedly asked to be discharged. Social history was positive for being unemployed for several months. She endorsed legal problems including DWI. Physical examination was positive for vitiligo, most marked on her face (x pattern) and bilaterally on her hands. Labs were significant for increased LFTs, anemia and thyroid disorder. Per family members, the patient had a history of bipolar disorder and paranoia. She refused psychotropic medications and remained illogical, disorganized and paranoid. She was selectively compliant with her vitamin supplements and levothyroxine. Although she denied hallucinations, she was often seen engaging in self-talk. She required frequent redirection to attend to her hygiene, as she was malodorous and unkempt. She had no insight into her condition and did not process treatment recommendations. Petition for court-ordered medications was filed.

NO. 113

SNAKES IN THE HOSPITAL

Lead Author: Amit Mistry, M.D.

SUMMARY:

Background: Post-traumatic Stress Disorder (PTSD) is marked by increased anxiety following exposure to a traumatic event, which may include witnessing or being involved in a horrific accident, natural disaster or assault; physical/sexual abuse; or military combat. PTSD is characterized by a persistent fear, reliving the event, avoiding trauma reminders, and having negative mood or thoughts. The physiological response is a state of hypervigilance and hyperarousal. PTSD often occurs with depression, anxiety and substance use. **Case:** S.H., a 70-year-old male, presented to the ER with an episode of hematemesis, melana and altered mental status (AMS). He had a psychiatric history of PTSD from Vietnam combat and alcohol use disorder (last drink was two years ago). His past medical history included alcoholic liver cirrhosis with ascites, chronic kidney disease type IIIA (CKD) and Wernicke's encephalopathy. Collateral information from the daughter revealed that S.H. was feeling ill for three days with abdominal pain and several episodes of hematemesis and hematochezia. He was admitted to the MICU with unstable vital signs and started on an octreotide drip for his upper G.I. bleed, rifaximin and lactulose for elevated ammonia and furosemide for management of ascites. S.H. was stabilized, and his mentation improved to baseline (oriented to self and place with confabulation and impaired cognition/concentration), and he was transferred to the medical floor. Paracentesis reduced his ascites. With all of his tests within normal limits, the patient was seemingly ready for discharge. However, S.H.'s mentation seemed to worsen. He complained of snakes in his bed and on the floor and that military personnel were poised to kill him and the staff. Initially, the medical team was puzzled by this shift in mental status. Workup was within normal limits, and his daughter noted no alcohol intake for the past two years. However, the daughter provided a clue that this occurred once in a past hospitalization. Further review of S.H.'s medical history revealed that his PTSD medication (venlafaxine) was discontinued on admission. He was restarted on his venlafaxine, titrated to his prior dose and given a short course of haloperidol. The patient's mentation improved to his baseline, and his visual hallucinations regressed. The patient was then discharged as previously planned. **Discussion:** As often occurs, S.H. presented with multiple confounding factors, which can each cause AMS. Such causal factors include hepatic encephalopathy from liver cirrhosis, alcohol withdrawal with extensive alcohol history and uremia from CKD. Another possible etiology is serotonin discontinuation syndrome, which could explain some symptoms (visual and autonomic disturbances), but not his more severe AMS with delirium. Clinicians should be aware of a patient's psychiatric history and remember to continue psychiatric medications to avoid discontinuation syndromes and return of psychiatric problems.

NO. 114

POSTICTAL PSYCHOSIS: RECOGNITION AND IMPACT ON LONG-TERM PSYCHOLOGICAL CARE

Lead Author: Paroma Mitra, M.D., M.P.H.
Co-Author(s): Meenal Pathak, M.D., Ankit Jain, M.D., Claude Macaluso, M.D.

SUMMARY:
Background: Postictal psychosis is a clinical entity defined by an episode of psychosis (often with confusion and delirium) developing within one week of a seizure or cluster of seizures. The mental state is characterized by delirium or delusions (e.g., paranoid, nonparanoid, delusional, misidentifications) or hallucinations (e.g., auditory, visual, somatosensory, olfactory) in clear consciousness. **Case:** Two patients at Harlem Hospital carrying a previous diagnosis of generalized tonic-clonic epilepsy were brought in after continuous seizure activity. In both cases, psychotic features developed after continuous seizure activity. Symptomatology differed where one patient was extremely psychotic and violent and the other patient presented with disorganized behavior. In both cases, psychiatry was involved and patients were treated with antipsychotics and recovered within a few days. Both patients continue to see psychiatry regularly and are treated with antipsychotic medications. **Methods:** No prospective trials in the treatment of psychosis seen in the postictal stage have been done. Almost all studies emphasize vigilant monitoring of patients with known episodes of postictal psychosis who also have risk factors present. The literature review suggests a low-dose atypical antipsychotic medication, especially during the early stages of the episodes. There is inconclusive evidence on long-term treatment and impact. **Conclusion:** Postictal psychosis is seen in many patients with epilepsy. A thorough evaluation and detailed history is important to early recognition and treatment. Adequate seizure control can lead to a decrease in incidence of the same. However, evidence does not point to long-term antipsychotic treatment. A multidisciplinary approach may be optimal to long-term care.

NO. 115
WITHDRAWN

NO. 116
HYPEROSMOLAR HYPERGLYCEMIC STATE WITH OLANZAPINE: A CASE REPORT AND REVIEW OF LITERATURE
Lead Author: Lauren E. Moore, M.D.
Co-Author(s): Surbhi Khanna, M.B.B.S.

SUMMARY:
Background: Metabolic disturbances, including weight gain and hyperglycemia, are common side effects of second generation antipsychotics (SGAs). In comparison to other SGAs, olanzapine is a notorious offender. Hyperosmolar hyperglycemic state (HHS) has also been attributed to the use of certain antipsychotics. HHS is a serious, even life-threatening complication of diabetes that presents with severe hyperglycemia, dehydration and often mental status changes. Serious complications include thrombotic events, coma and death, with a mortality rate as high as 20%. We present a case of olanzapine-induced HHS. **Case:** The patient is a 39-year-old Caucasian male with a history of bipolar I disorder with multiple hospitalizations and no pertinent past medical history who presented to the emergency department with fatigue, “feeling like a robot” and increased thirst. The patient did not have a prior history of diabetes, but review of his recent random blood glucose showed a range of 104 – 258mg/dL. His medications included lithium 900mg twice daily, valproate ER 1,000mg twice daily and olanzapine 15mg twice daily. Of note, olanzapine was added one month prior to his above presentation. On exam, the patient was afebrile with a heart rate of 104/min, BP 139/80mmHg and BMI 32.57kg/m2. Physical exam was notable for an obese, white male with dry mucous membranes and a normal neurological exam, with the exception of his mental status. He was described as being drowsy and oriented x3, distractible, and able to answer questions, but only with repetition. Labs were significant for sodium of 133mmol/L, BUN of 21mg/dL, creatinine of 1.1mg/dL and glucose of 528mg/dL. Osmolality was slightly elevated to 305mOsm/kg. Urinalysis showed 3+ glucose but was negative for ketones. VBG showed a normal pH and bicarbonate. Other labs included a lithium level of 1.0mM/L, a valproate total level of 57ug/mL and an HbA1c of 12.1%. EKG showed normal sinus rhythm with a heart rate of 80/min and QTc of 448mS. Blood alcohol level and drug screen were negative. He was admitted to general medicine and treated with IV normal saline and regular insulin infusion. Lithium and valproate were continued, but olanzapine was held because it was thought to be a potential cause of HHS. Additionally, he was diagnosed with diabetes mellitus type 2 and started on metformin and Lantus. The following day, his mental status had returned to baseline and labs had improved. **Discussion:** In this case, olanzapine most likely precipitated the hyperglycemic crisis. However, given his elevated HbA1c and risk factors, including obesity, he likely had pre-existing insulin resistance. Given the wide use of olanzapine, it is important to

recognize the rare, yet serious complications of atypical antipsychotic use. To ensure early intervention, frequent monitoring of weight, BMI, blood glucose, lipid profile and EKG are recommended, particularly at the onset of treatment.

NO. 117

LISDEXAMFETAMINE FOR THE TREATMENT OF BINGE EATING DISORDER: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Maria E. Moreno, M.D.

SUMMARY:

Background: Many different types of therapies and medications, including antidepressants, anticonvulsants, and antiobesity and antiaddiction agents, have been used off label for the treatment of binge eating disorder. *DSM-5* classified binge eating disorder as a separate entity, as previously the diagnosis was part of eating disorder NOS. In January 2015, lisdexamfetamine became the first medication approved by the FDA for the treatment of moderate to severe binge eating disorder. As awareness of the diagnosis continues to increase, the disorder continues to be underdiagnosed and poorly managed. Binge eating disorder can cause significant impairment in quality of life and severe health consequences. This poster highlights the current data on binge eating disorder and pharmacological treatment. **Case:** A 21-year-old Caucasian female with a history of binge eating disorder, general anxiety disorder, major depressive disorder and ADHD is seen in clinic for weekly CBT and medication management. The patient was officially diagnosed with eating disorder NOS in April 2014, but she reported binge eating episodes since childhood. As a child, the patient hoarded food and binge ate in the setting of chronic stressors, including her mother's untreated bipolar disorder. The patient's medication regimen included escitalopram 15mg daily, topiramate 75mg BID and Adderall 15mg daily. The patient reported multiple episodes of binging per week, loss of control, and feelings of guilt and embarrassment. The patient was started on lisdexamfetamine 30mg daily, and both topiramate and Adderall were discontinued. Over the course of three months, the patient was titrated to lisdexamfetamine 50mg daily; she denied any adverse effects and reported a steady decrease in intensity and frequency of binges. After three months of initiating treatment, the patient reported no episodes of binging and remained in remission for the next two months. Unfortunately, the patient relapsed and reported multiple binges per week; she denied any specific triggers or psychosocial stressors. The patient was reluctant to increase lisdexamfetamine any further, as she feared the medication would not be effective, even at maximum dose. **Discussion:** Currently, only a few trials have been published studying the efficacy of lisdexamfetamine in treating binge eating disorder. Randomized controlled, double-blind, parallel-group trials demonstrated that lisdexamfetamine 50mg/day or 70mg/day resulted in a significant decrease in symptoms of binge eating. Some limitations of these trials include exclusion of patients with comorbid psychiatric illnesses or concurrent use of psychiatric medications. Research including longitudinal studies and randomized controlled trials comparing efficacy of lisdexamfetamine versus other medications is warranted to provide further evidence and guide treatment for physicians.

NO. 118

SLE-INDUCED MANIA AND PSYCHOSIS: A CASE REPORT

Poster Presenter:Donald W Simpson II, M.D.
Lead Author: Pranathi Mruthyunjaya, M.D.
Co-Author(s): Donald W. Simpson II, M.D., Brett I. Cunningham, M.D., Clayton D. Morris, M.D.

SUMMARY:

Neuropsychiatric manifestations of systemic lupus erythematous (SLE) are of clinical significance due to their high incidence, varied presentations and severe course, leading to delayed treatment and poor prognosis. Neuropsychiatric symptoms of SLE can be part of an initial presentation of SLE or, most often, develop during the first few years of the disease's course. We present a case of a 42-year-old African-American female with undiagnosed SLE and no prior psychiatric history who developed symptoms of mania and psychosis for several weeks prior to her admission to a state inpatient psychiatric facility. A high clinical suspicion due to late onset of psychosis and findings on physical examination and supportive laboratory results led to the diagnosis of SLE-induced psychosis and mania. She was treated with an antipsychotic agent, and oral corticosteroid therapy was initiated, leading to complete resolution of psychiatric symptoms. This case report focuses on the epidemiology, presentation, diagnostic approach and management of neuropsychiatric manifestations of SLE.

NO. 119

ASSESSMENT OF DECISION MAKING CAPACITY IN A PSYCHIATRIC PATIENT: A COMMON MYTH

Lead Author: Sahil Munjal, M.D.
Co-Author(s): Yvette Smolin, M.D.

SUMMARY:

Some of us may equate "psychosis" with incapacity, but the case we will now present demonstrates that this isn't always true and that even people who by most measures are psychotic may nonetheless be capable of making wise and thoughtful decisions about their lives. We are going to present a case of a 67-year-old female patient with a diagnosis of schizophrenia who presented with worsening auditory hallucinations and progressive weight loss. In addition, this patient had a complicated medical course, which eventually led to multiple capacity evaluation requests towards the consultation team. The question of capacity in this patient and the psychiatric population as a whole motivated us to review the literature, since the assumption by many on the medical teams was that psychiatric patients do not have the capacity to participate in their medical care. There are many misconceptions floating around about this topic, which we want to address through this poster. A diagnosis of schizophrenia does not automatically render a person unable to make decisions about his or her own medical care. Even patients with severe mental illness may have significant areas of reality testing still intact. Ethically, it is important to consider that patients with chronic mental illness can understand treatment options and express consistent choices. Medical providers may exclude psychiatric patients from making end of life decisions because they are worried about the emotional fragility of the patient and assume they do not have the capacity to participate in these important decisions. This case is an example of a patient who was able to participate in her care, regardless of her psychiatric state.

NO. 120

BUPROPION-INDUCED HYPONATREMIA: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Sahil Munjal, M.D.
Co-Author(s): Yvette Smolin, M.D.

SUMMARY:

Bupropion is an antidepressant that acts by inhibiting the reuptake of dopamine and noradrenaline. Although hyponatremia has been reported to be associated with use of various antidepressants, especially selective serotonin reuptake inhibitors (SSRIs) and serotonin norepinephrine reuptake inhibitors (SNRIs), it has rarely been reported with bupropion. Some clinicians argue that the proneness to hyponatremia is deï¬ned by the antidepressant's potency to inhibit the reuptake of serotonin, in accordance with the hypothesis of a serotonin-induced increase in ADH (Antidiuretic Hormone), mediated by the hypothalamic serotonin receptors. Alternatively, the limited evidence of bupropion as a causative agent of hyponatremia suggests that the mechanisms by which antidepressants can provoke hyponatremia may not be purely related to their potential to inhibit serotonergic reuptake. We present the case of a 72-year-old female with a major depressive episode who developed hyponatremia induced with bupropion and thereby discuss the existing literature on this topic. The clinical symptoms of hyponatremia can be misinterpreted as a worsening of the primary psychiatric illness and can lead to potentially serious consequences if not fully evaluated. We recommend that clinicians should be well aware of this side effect, and sodium levels should be checked within the ï¬rst two weeks after initiating such treatment in patients, especially with additional risk factors for hyponatremia, such as older age, female sex, diuretic use, low BMI and a low baseline plasma sodium level along with unexplained changes in mental status (e.g., lethargy or confusion) at any time during treatment with antidepressants.

NO. 121

PSYCHIATRIC SEQUELAE OF UREA CYCLE DISORDERS: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Dewey S. Murphy, M.D.
Co-Author(s): Arslan Muzaffar, M.D.

SUMMARY:

Urea cycle disorders are inborn errors of metabolism that affect the body's ability to convert ammonia, a waste product of protein metabolism, to urea, which can be excreted by the kidneys. Individuals born with a nonfunctional or partially functional enzyme in this pathway are prone to multiple hyperammonemic crises that will have a variety of deleterious effects on the central nervous system, including cerebral edema, altered neurodevelopment, and NMDA-mediated excitotoxicity. These disorders are often detected in early childhood due to the severe repercussions of excess ammonia, but if an

individual has partial (rather than total) urea cycle enzyme deficiencies, the disorder may go undetected until later in life. As a result of multiple hyperammonemic crises, these individuals typically develop a number of neurological and psychiatric symptoms, most prominently including seizure disorders, but also including a range of psychiatric sequelae including confusion, behavioral disturbances and psychosis. The mechanism of CNS damage and the critical role played by the liver in the disease create a unique set of parameters for managing both the primary disorder and its neuropsychiatric consequences. In this case report, we discuss a 31-year-old male patient with a history of carbamoyl phosphate synthetase I deficiency who had an initial onset of symptoms in his early teens and developed a seizure disorder as well as significant neurocognitive impairment. He was admitted to the medical floor with altered mental status, including aggressive and combative behaviors as well as hallucinations, and was seen by the psychiatric consult-liaison service. The patient's hospital course and treatment are discussed, providing an opportunity to explore a review of the literature, the mechanisms of this rare disorder and the unique constraints they impose on available pharmacological interventions.

NO. 122

DIABULIMIA: A CASE REPORT AND LITERATURE REVIEW ON A RARE AND UNUSUAL EATING DISORDER

Lead Author: Trenton Myers, M.D.
Co-Author(s): Mohamed Kamel, M.D., Derek Brown, D.O.

SUMMARY:

Objective: We describe a case of a rare and interesting eating disorder affecting only type 1 diabetics and review current literature that discusses this disorder. **Background:** "Diabulimia" describes a condition only affecting type 1 diabetics in which the patient will binge eat while concurrently decreasing his or her insulin dose, allowing blood glucose levels to become dangerously elevated and leading to high glucose excretion in the urine and subsequent weight loss. This term is recognized by the National Eating Disorder Association and is commonly known amongst type 1 diabetics with disordered eating behaviors. However, many mental health professionals are unaware of its existence. **Case:** A 31-year-old female with a history of type 1 diabetes presented to the medical emergency department for suicidal ideations with a plan to "eat herself into a coma" by discontinuing her insulin in hopes of going into a diabetic coma and passing away peacefully. She reported a long history of depression and "diabulimia," which she had struggled with since she was a teenager. The patient reported a long pattern of binge eating and subsequently decreasing her insulin to raise her blood sugar and shed calories through elevated urine glucose. She was well-educated and well-aware of the mechanism through which the weight loss occurred. The patient was interviewed in depth about how she had come to struggle with this disorder, how her symptoms started and how she learned about this method of shedding calories. She had successful treatment for this condition in the past at a hospital with a specialized eating disorders unit, but reported that none of her providers had heard of this condition prior to her admission. She had recently relapsed following the loss of her job, subsequently worsening her depression, and identified this relapse as a direct cause of her suicidal ideations. She was medically stabilized and admitted to the inpatient psychiatric unit. She was stabilized through a combination of therapy and antidepressant medication and discharged, at the patient's request, to an inpatient rehab facility that specializes in this specific disorder. **Methods:** A literature search on PubMed was conducted using the keywords "diabulimia" and "disordered eating behavior in type 1 diabetes." A total of 40 articles resulted from this search, and relevant articles to this case were reviewed. **Discussion:** From *DSM-5* criteria, "diabulimia" would fall under the category of "unspecified feeding or eating disorder." The incidence of disordered eating behaviors in type 1 diabetics is much more prevalent than the general population. From the literature review, estimates of eating disorders in type 1 diabetics range between 30 – 40%. The true rate is likely higher due to underreporting. Most cases of this disorder are published in journals of diabetic disorders or journals of nursing, but cases described in psychiatric journals are very scarce.

NO. 123

UNDIAGNOSED TRAUMA IN SEVERE MENTALLY ILL PATIENTS

Lead Author: Vahid Nikzad, M.D.
Co-Author(s): Panagiota Korenis, Ali Khadivi

SUMMARY:

Lifetime exposure to traumatic events and PTSD symptoms are more frequently observed in severe mentally ill patients (schizophrenia or schizoaffective disorder) when compared to the general population. Only a small portion of these patients are diagnosed and receive appropriate treatments for PTSD. Reviewed literature suggests that undiagnosed PTSD in patients with schizophrenia or schizoaffective disorder is associated with severity in psychotic symptoms. These patients are also more likely to attempt suicide, present with dysphoria and anxiety, and have a higher rate of psychiatric and medical readmissions. While abuse is commonly assessed at the time of intake, patients who present with severe and acute symptoms are either unable to be assessed thoroughly or management of their psychotic symptoms becomes the focus of the admission. Here, we present a case of a 37-year-old female with a history of schizoaffective disorder who was admitted to the psychiatric inpatient unit due to an increase in auditory hallucinations, depressed mood and irritable affect. She had a history of 15 psychiatric hospitalizations since the age of 17. During assessment, she reported a history of sexual assault and presented with symptoms of post-traumatic stress disorder, including nightmares, flashbacks, and excessive fear and anxiety. Consent was provided to collect medical records from her past six admissions. Upon review of the admission notes, progress notes and discharge summaries of her previous hospitalizations, we noticed that the patient had never been diagnosed nor been treated for PTSD. We started sertraline for treatment of PTSD symptoms and dose increased to 200mg daily. Her anxiety and dysphoria decreased after a few days. We also informed her outpatient treatment team, and the patient would receive psychotherapy after discharge. For one year follow-up, patient did not have psychiatric hospitalization. Our poster will explore the literature surrounding the management of trauma and effective treatment strategies including staff training and education about the incidence of trauma in the severely mentally ill population. We aim to bring to light the need for doctors to adequately asses and recognize trauma symptoms in severely mentally ill patients.

NO. 124

PTSD AFTER A BERT ALERT IN A PATIENT WITH ACUTE MI AND A PAST HISTORY OF DEPRESSION

Lead Author: Abhishek R. Nitturkar, M.B.B.S.

SUMMARY:

A 60-year-old male with a past psychiatric history of depression was taken to a hospital for catheterization after a myocardial infarction (MI) and developed delirium during treatment. The patient needed to be physically restrained and was administered haloperidol. The patient developed symptoms of hypervigilance, avoidance and nightmares, and his depression worsened. This poster reviews factors in the development of PTSD after BERT alert. The patient's age and pain medications could have contributed. Psychoeducation, however, had minimal effect on the patient.

NO. 125

RECALL OF DELUSIONS DURING DELIRIUM RELATED TO DEVELOPMENT OF PTSD AFTER DELIRIUM IN THE ICU: A CASE REPORT

Lead Author: Abhishek R. Nitturkar, M.B.B.S.

SUMMARY:

This is a case about of a 60-year-old male with a history of recurrent depressive disorder who had to be hospitalized for management of myocardial infarction after a spinal surgery. The patient developed delirium during the hospitalization and had episodes of aggression that necessitated chemical and physical restraints. After recovery, the patient was discharged home; however, he developed PTSD symptoms of hypervigilance, flashbacks, avoidance and nightmares and was diagnosed with PTSD on initial intake at a psychiatric clinic. During the assessment at the clinic, the patient recalled the delusions that he had expressed during the hospitalization and expressed distrust towards the treating hospital. The review of records confirmed the patient's recollections. Review of literature supports the findings that the memory of delusions is associated with PTSD. This case highlights the facts in the literature that recall of delusions and relatively unpleasant memories of real events during delirium in the ICU stay is related to the development of PTSD. It is possible that early detection of memory of delusions could help early detection and management of PTSD.

NO. 126

MULTI-MODAL APPROACH TO MANAGEMENT OF REFLEX SYMPATHETIC DYSTROPHY: A CASE REPORT

Lead Author: Vincent N. Nwankwo, M.B.B.S.
Co-Author(s): Adam B., M.D.

SUMMARY:

Objective: At the conclusion of this session, the participants should be able to: 1) Recognize the clinical presentation of reflex sympathetic dystrophy (RSD); 2) Appreciate the need for a multimodal treatment approach in addressing the significant physical and emotional difficulties faced by these patients; and 3) Understand the need for early intervention. BAKCGROUND: Reflex sympathetic dystrophy (RSD), currently known as complex regional pain syndrome type I, is a chronic progressive condition characterized by painful discomfort and abnormalities in the sensory, motor and autonomic nervous systems. **Case:** A 16-year-old African-American female with past psychiatric history of mood disorder secondary to general medical condition (RSD) and anxiety disorder NOS has had three inpatient psychiatric hospitalizations. She was diagnosed with RSD in 2013 by her orthopedist due to chronic pain following a right ankle fracture that occurred before 2011. She received therapy by a clinical psychologist (attached to the orthopedic care) for her mood and anxiety symptoms. She also attended a physiotherapist for physical rehabilitation. She was tried on gabapentin, Lyrica, naproxen, Motrin, cyclobenzaprine and Tylenol for pain control but with minimal benefit, and she would often discontinue her medication on her own due to poor pain control. She smokes cannabis occasionally to self-medicate. She first came to the care of a psychiatrist in February 2015 after presenting to the medical emergency room with suicidal ideation, irritable mood, oppositionality, behavioral dysregulation and aggressive outburst and was subsequently hospitalized for acute stabilization. During her first hospitalization, fluoxetine was switched to duloxetine and up titrated gradually over months to address her affective and pain symptoms. All hospitalizations were triggered by suicidal ideation in the context of psychosocial stressors and worsening pain. She is currently followed up at the outpatient psychiatric clinic, receives weekly individual cognitive behavioral therapy and continues to follow up with her orthopedist and physiotherapist. With the institution of these various services, she has shown significant improvement with regards to her affective symptoms and physical pain; she is no longer suicidal and has resumed full academic activity. She recently developed a facial rash with possible malar distribution and was referred for rheumatology evaluation by her orthopedist. **Discussion:** There is no clear understanding of the mechanism(s) of cause for this condition, and as such, there is no definite treatment. The physical pain component of this condition can be psychically and emotionally disenabling and often results in worsening of existing/co-morbid psychiatric conditions. There is significant risk of substance abuse. The need for early intervention aimed at improving the long-term outcome of this condition remains paramount.

NO. 127

MENTAL HEALTH CONSIDERATIONS IN THE GI PATIENT: RECLASSIFYING DIAGNOSIS OF FUNCTIONAL GI COMPLAINTS

Poster Presenter:William D. Rumbaugh Jr., M.D.
Lead Author: Andrew Owen, M.S.
Co-Author(s): Harold J. Wain, Ph.D., William Rumbaugh, M.D.

SUMMARY:
Irritable bowel syndrome (IBS) is one of many functional syndromes that cross the range of medical specialties. Investigators have begun to study the patterns between these syndromes in an effort to form a more unified overarching theory of illness. Bodily distress syndrome represents the latest attempt at unifying the medical and psychiatric functional/somatoform range of syndrome patterns. This case concerns a 37-year-old Iraqi-American female with no prior psychiatric history and a past medical history of postural orthostatic tachycardia who presented to her gastroenterologist with the chief complaint of chronic diarrhea with abdominal pain and bloating. The patient was deemed to meet criteria for IBS. She was referred for psychiatric consult where further elucidation of her history revealed an unstable family unit from a very early age. She reported multiple traumatic episodes during childhood. In adulthood, she was high-achieving, obtaining a master's degree and completing military service with promotion from enlisted ranks to commissioned officer. Using the new classification of bodily distress syndrome, this patient falls on the spectrum of functional illnesses that include cardiopulmonary, musculoskeletal and gastrointestinal symptoms as the primary source of complaints. Given the significant impact on patient quality of life and cost to the health care system, re-examining IBS as part of a larger syndromal pattern offers the potential to improve outcomes in this historically challenging patient population.

NO. 128

EDUCATING A SCHIZOPHRENIC PATIENT ABOUT MET: CHALLENGES OF STARTING ON THE INPATIENT UNIT

Lead Author: Ronak Patel, M.D.
Co-Author(s): Ramneesh Baweja, M.D., Luisa Gonzalez, M.D.

SUMMARY:
Motivational enhancement therapy (MET) is a systematic approach designed to induce a rapid, internally motivated change of a person's addictive behavior, based on the belief that the desire, inspiration and motivation to change lie within the patient. Studies demonstrate effectiveness of MET in addiction, and it has been used successfully with dually diagnosed individuals in the outpatient setting. However, limited research exists on the challenges of initiating MET on the inpatient unit. Moreover, in few reported instances, the use of MET in this setting has demonstrated improvement in the long-term engagement and adherence with treatment in the community, as well as helping with craving when combined with adjunctive medications. Studies report that the prevalence of cannabis abuse in schizophrenia is comparable to the general population. However, the length of stay in the hospital and suicide rates has been documented to be much higher in schizophrenics who abuse cannabis. We present a case of a dually diagnosed schizophrenic noncompliant patient with a long history of cannabis and K2 "synthetic cannabinoid" use who presented psychotic and delusional with aggressive behavior. MET was initiated during his hospitalization and then continued in the outpatient setting to decrease incidence of substance use and avoid rehospitalization. Our poster will present the treatment strategies used by the clinician to engage this schizophrenic patient in participating in MET, as well as the challenges of providing patient education about MET.

NO. 129

TREATMENT OF CATATONIC SYNDROME IN BIPOLAR DISORDER WITH ARIPIPRAZOLE

Lead Author: Mitesh Patel, M.D.
Co-Author(s): Cuneyt Tegin, George Kalayil

SUMMARY:
Background: Bipolar disorder is characterized by periods of elevated mood and depression. Catatonic syndrome is a feature of bipolar disorder that is characterized by restlessness or purposeless overactivity alternating with immobility. Catatonia is often an under-recognized syndrome in the psychiatric population. Benzodiazepines and ECT are considered first line treatments for catatonia. Atypical antipsychotics are used cautiously for treatment-resistant catatonia and, when used to treat catatonia, may also treat the underlying manic mood state. Aripiprazole is an antipsychotic that is a partial agonist at the D2 receptor and has a very high affinity for the D2 receptor. Aripiprazole is used in the treatment of schizophrenia and bipolar disorder. **Case:** We will present several cases of a catatonic patient successfully treated with combinations of lorazepam and aripiprazole. First, a 57-year-old African-American male with a history of bipolar disorder admitted with decreased oral intake and immobility was initially treated with risperidone and lorazepam. ECT was discussed, but the patient refused. He experienced extrapyramidal symptoms secondary to risperidone, and aripiprazole was started and titrated up to 20mg daily. The patient responded well, and the lorazepam was tapered down. Second, a 31-year-old transgender female with a history of bipolar disorder admitted for decreased movements and immobility was treated with a combination of lorazepam and aripiprazole. The patient refused ECT. She responded well to this regimen and was discharged on aripiprazole. **Discussion:** First-line treatment of catatonia is with ECT or benzodiazepines. Atypical antipsychotics are used for treatment-resistant cases. In these two cases, aripiprazole was used in conjunction with lorazepam to treat catatonia. Lorazepam was used initially to treat catatonia while the aripiprazole dose was increased. These patients responded well to this regimen, and the catatonic state resolved. Aripiprazole is a unique antipsychotic in that it is a partial agonist at D2 receptors. In the hypodopaminergic hypothesis of catatonia, decreased dopamine leads to the catatonic state. One explanation of how aripiprazole is a unique and effective treatment for catatonia is the dopamine agonism of this drug, which may lead to improvement in symptoms, as well as treatment of the underlying manic disorder.

NO. 130

USHER'S SYNDROME AND PSYCHOPATHOLOGY: A CASE REPORT

Poster Presenter:Irina Chikvashvili, D.O.
Lead Author: Mitali Patnaik, M.D.
Co-Author(s): Irina Chikvashvili, D.O., William Uffner, M.D., Mahrukh Khan, M.D.

SUMMARY:

Background: Usher syndrome (USH) is characterized by congenital sensorineural hearing loss, retinitis pigmentosa and, at times, vestibular areflexia with a prevalence rate of 5 – 6/100,000 in northern Europe and the U.S. and is the major cause of genetic deafness and blindness. Previous studies reported the presence of various mental disorders associated with Usher syndrome. The most common manifestation reported is schizophrenia-like psychosis. This association is supported by the Stress-Related Theory, which proposes that visual or auditory impairment is associated with a higher rate of depression, suicidal behavior, psychological stress and social handicap. The psychiatric symptoms may also be related to the diffuse cerebral involvement characteristic of USH. Regarding psychiatric symptoms, the limitation of communication may affect their management. **Case:** A 54-year-old Caucasian female was admitted for suicidal ideation, depressed mood and anxiety in the context of financial stress and fear that her husband would die and leave her without help. She reported disturbed sleep and poor appetite and had daily early morning vomiting. The patient had a history of somatic delusions and paranoia in 2012, requiring hospitalization. She attempted suicide in 2012 by ingesting rubbing alcohol. Her family history was positive for USH in two sisters. She completed 12th grade. History was mainly obtained through old records (2012), collateral from husband (deaf) and two-interpreters. Sensitivity was exercised at all times toward the patient's limitations. The patient had failed trials with quetiapine, citalopram and risperidone. During inpatient stay, family sessions were held, and the patient was encouraged to attend exercise therapy using physical aids. She exhibited certain traits of dependence and learned helplessness in the presence of her husband. The treatment approach was geared to prevent falls and provide clear explanations of treatment modalities using interpreters and the "guiding arm" technique. Due to her fixation on medication side effects and hesitancy to titrate her regimen, venlafaxine XR was continued at 37.5mg, and olanzapine was kept at the starting dose of 2.5mg. She was discharged with a diagnosis of major depressive disorder with psychotic features. After care recommendation was to follow-up at an outpatient clinic. **Conclusion:** The observed rate of association between a pleiotropic genetic disorder such as Usher's and its impact on mental health further illustrates the multifactorial pathogenesis of psychiatric conditions. Genes, environment, sensory cues, stress and trauma all possibly play a role, thus emphasizing a biopsychosocial approach to our management.

NO. 131

VERY LATE ONSET SCHIZOPHRENIA-LIKE PSYCHOSIS: A CASE STUDY

Lead Author: Markian Pazuniak, M.D.
Co-Author(s): Russell Foo, M.D.

SUMMARY:

Very late onset schizophrenia-like psychosis (VLOSLP) is defined as onset of symptoms after the age of 60. Psychotic symptoms more prevalent in VLOSLP compared to schizophrenia include tactile, visual and olfactory hallucinations and persecutory delusions. Psychotic symptoms less common include thought disorders, affective flattening and blunting. A 67-year-old African-American man, C.B., with diabetes mellitus II and no prior psychiatric encounters presented with new onset psychosis and a relapse one year later. C.B. experienced religious preoccupation that manifested as delusions and auditory hallucinations and paranoia, with failure to attend to his nutrition out of fear that he was being poisoned. One year later, C.B. presented in a similar fashion. C.B.'s symptoms failed to respond to olanzapine and divalproex sodium, but responded to clozapine. Two weeks after the second discharge, C.B. presented for mood lability without psychotic symptoms. Clozapine had been discontinued one week before admission. These symptoms resolved with the resumption of clozapine. In both presentations, no organic etiology was found for his psychosis. C.B.'s presentation were consistent with some features found in VLOSLP, including visual hallucinations, social isolation before onset, persecutory delusions and lack of a thought disorder. Organic etiologies were investigated, but none were found. C.B. initially responded to olanzapine and divalproex. Upon his second presentation, trials of these medications and risperidone, both as monotherapy and in combination with divalproex, failed to effect a similar improvement. C.B. ultimately responded to clozapine. In both presentations, he was able to achieve a function level that was near his premorbid state. C.B. also exhibited mood symptoms in close proximity to his psychotic disorder. This mood disorder also resolved with clozapine.

NO. 132

CASE REPORT: TACTILE HALLUCINATIONS: AN ATYPICAL PRESENTATION OF CREUTZFELDT-JAKOB DISEASE

Lead Author: Luis Pereira, M.D.
Co-Author(s): Carmen Casasnovas, M.D., Daniel Safin, M.D., Simona Goschin, M.D.

SUMMARY:
Background: Creutzfeldt-Jacob disease (CJD) is a rare, rapidly progressive spongiform neurodegenerative brain disease with an incidence of 1 – 2 cases per million annually. Several forms of CJD have been described. The sporadic CJD type affects an older population and presents with rapidly progressive dementia, myoclonus and other neurological findings, ultimately leading to death. The 14-3-3 protein in the cerebrospinal fluid (CSF) has 87% specificity, and the EEG shows triphasic waves at 1 – 2 per second. CJD variant type affects younger patients and is associated with more prominent psychiatric symptoms. The EEG and the CSF are less helpful, but characteristic MRI abnormalities (high signal in pulvinar nucleus) have 100% specificity. **Case:** A 72-year-old male with no prior psychiatric or substance use history presented to the hospital for new onset altered mental status, significant psychiatric symptoms (tactile and visual hallucinations, paranoia, insomnia) and minimal neurological symptoms. Initial imaging studies were negative. A CSF exam showed high tau protein but negative 14-3-3 protein. EEG only showed mild, diffuse central dysfunction. Other causes of rapidly progressive altered mental status were ruled out. A more detailed review of the MRI showed a constellation of findings suggestive of CJD. Haloperidol was started for psychosis, and supportive measures were provided. The patient's neurological symptoms progressed to severe impairment (frontal release signs, diffuse hyperreflexia, severe cerebellar deficits and leg apraxia). His condition continued to rapidly deteriorate until his demise. **Methods:** A literature review was conducted by searching PubMed using the keywords "Creutzfeldt-Jakob Disease," "Psychiatric Presentation," and "Clinical presentation." **Discussion:** CJD can be very challenging to diagnose. As is clear in this case, psychiatric manifestations such as tactile and visual hallucinations may be the first and most prominent symptoms. Furthermore, our patient's presentation had features characteristic of both variant and sporadic forms and, although the initial MRI reading, protein 14-3-3 and EEG were negative for CJD, only a later re-evaluation of the MRI showed the characteristic findings. This case shows that, combined with clinical evaluation, imaging can be very useful even in the setting of negative lab and EEG workup. However, the specific MRI findings associated with CJD may be initially missed and therefore require an experienced radiologist. We stress the important role of the CL psychiatrist in guiding the primary medical team to deepen medical workup, even when results are initially negative.

NO. 133

THE PSYCHEDELIC RENAISSANCE IN PSYCHIATRY: AN EVIDENCE-BASED REVIEW

Lead Author: Kimia Pourrezaei, D.O.
Co-Author(s): Lakshit Jain, M.D., Sarah Noble D.O.

SUMMARY:
Background: Recent years have seen renewed interest in the therapeutic potential of psychedelics. Given the lingering stigma of the 1960s, researchers have worked to dispel myths and establish safety parameters for the clinical use of agents including MDMA, psilocybin and LSD. Increasing evidence suggests that MDMA, given in a controlled environment, may be a viable option for the treatment of several psychiatric conditions. **Objective:** The purpose of this review is to evaluate the rationale and evidence supporting the safety and efficacy of MDMA-assisted psychotherapy. **Methods:** A literature search was conducted using the terms MDMA, autism, PTSD and psychotherapy. **Discussion:** MDMA is structurally similar to both amphetamines and hallucinogenic phenethylamines. It acts primarily as an indirect serotonergic agonist. MDMA also increases prolactin, ACTH, cortisol and oxytocin, a neuropeptide known to attenuate the amygdalar response to anxiety and also to promote social affiliation. These empathogenic qualities led to its use as a catalyst to psychotherapy in the 1970s. In the following decade, MDMA became a popular club drug, leading to its eventual criminalization in 1985. Over the years, researchers have been divided in regards to the risk profile of MDMA. Some argue MDMA is neurotoxic, while others maintain the literature supporting this claim is marred by flaws in methodology and data analysis, resulting in biased conclusions. Statistics from recreational users are limited by several confounding factors, including the prevalence of polysubstance use and the ubiquity of impure MDMA. Numerous studies provide a rationale for continued investigation into the therapeutic potential of psychedelics. Hallucinogens

can produce lasting changes in personality domains, including openness and introspection, without the need for ongoing administration. In a recent RCC trial evaluating the efficacy of MDMA-assisted psychotherapy for chronic, treatment-resistant PTSD, participants receiving MDMA reported statistically significant symptom reduction from baseline with a response rate of 83%, as compared with 25% in the placebo group. Neurocognitive testing and monitoring of vital signs revealed no serious adverse events. A long-term follow-up study revealed enduring improvement in symptomatology. Current trials are focusing on the treatment of other conditions, including social anxiety in autism. **Conclusion:** Psychedelic-guided psychotherapy may be safe and effective for many refractory conditions. Advantages of this model include infrequent dosing resulting in less potential for side effects.

NO. 134

ROLE OF INFLAMMATORY CYTOKINES AND A NEW OUTLOOK ON PATHOPHYSIOLOGY AND TREATMENT MODALITIES IN BIPOLAR DISORDER

Lead Author: Rumana Rahmani, M.D.
Co-Author(s): Romil Sareen, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Bipolar disorder (BD) consists of symptoms of fluctuating mania and depression with a strong genetic predisposition evident in many cases. Although the role of inflammatory cytokines and their association with depression has been well-studied, recent studies have also been linking various cytokines playing a role in the development of BD. For the brain to function optimally, the neurons, synapses and neurotransmitters need to be perfectly in sync with each other. Any kind of misbalance can have major deleterious effects on a person's emotional well-being. An imbalanced peripheral production of cytokines at the level of mRNA and protein synthesis alters the associated signal transmission pathway, resulting in specific functional polymorphisms in the genes. This can drastically alter a person's emotional state from the way he reacts to the environment around him to how he emotes and deals with life's toughest challenges. Rather than completely relying on drug-device combinations for the treatment of mood disorders, some of the future treatments will have to be neurotrophic—they will help nerve cells restore their health, allowing them to grow and communicate better. By comparing and measuring cytokine presence in BD patients to euthymic patients, a correlation could potentially be established. **Objective:** The aim of this study was to conduct an extensive literature review of studies evaluating endogenous cytokines and their role on neurons and synaptic processes in patients with BD. A number of treatment modalities and their effects on neuroplasticity will be further discussed and reviewed. **Conclusion:** Increased activity of pro-inflammatory cytokines, especially of IL-6 and TNF alpha, were found to be significantly higher in bipolar manic patients than in normal controls, while IL-4 values were significantly lower in bipolar patients than normal controls. A more thorough study of the neurobiology of the disease process can pave way for various new and advanced treatment modalities that can help not only in restoring the balance between hormones and neurotransmitters but also help us better understand the communication between synaptic contacts and neural plasticity and ultimately be revolutionary in finding more links to uncover other psychiatric ailments.

NO. 135

ANTISOCIAL PERSONALITY DISORDER: WHERE AND HOW SHOULD WE MANAGE THESE PATIENTS?

Lead Author: Rumana Rahmani, M.D.
Co-Author(s): Pankaj Manocha, Imran Qureshi, Omar Colon, Asghar Hossain

SUMMARY:

Background: Antisocial personality disorder (ASPD), as defined by the American Psychiatric Association, is characterized by the presence of a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood, with individuals being at least 18 years old at the time of diagnosis. According to a landmark survey report conducted by the National Institute on Alcohol Abuse and Alcoholism, the National Institutes of Health (NIH) and the NESARC, 7.6 million people (3.6%) in the U.S. had antisocial personality disorder. The NIH estimates one percent of the U.S. population to have ASPD. Patients with ASPD are complicated cases to diagnose and manage. Most of the people with ASPD remain undiagnosed and untreated in the community. Some of them are treated for other comorbid conditions such as mood and/or anxiety disorders and drug and/or alcohol abuse. Here, the focus of the treatment is not personality disorders but coexisting comorbidities.

Once diagnosed, managing such patients is challenging for the nature of their illness (impulsivity, aggression, intrusiveness, lack of insight) and the above-mentioned coexisting comorbidities. Treatment interventions such psychotherapy and pharmacotherapy have been studied for managing such patients, but evidence of improvement is lacking in recent studies. Psychiatrists are reluctant to manage these patients because of their involvement with the criminal justice system as well. **Case:** We report a case of 35-year-old African-American male who was diagnosed with ASPD and had multiple comorbidities such as mood disorder NOS, attention deficit disorder, opioid dependence disorder and cocaine abuse disorder. The patient had been managed on several medications (including antipsychotics, antidepressants, mood stabilizers and stimulants) and in varied hospital settings (inpatient, partial hospitalization and outpatient) with limited improvement. **Objective:** The authors will discuss the current guidelines on interventions available for managing patients with ASPD. The authors will also discuss the role of pharmacological interventions, which are used in this population to treat symptoms rather than the disorder itself.

NO. 136

CLOZAPINE USE IN HIV-POSITIVE REFRACTORY SCHIZOPHRENIA PATIENTS: WHERE DOES FILGRASTIM FIT IN?

Lead Author: Anupriya Razdan, M.B.B.S.
Co-Author(s): Richard McCarthy, M.D.

SUMMARY:

Background: Clozapine is the only FDA-approved therapy for treatment-resistant schizophrenia, but its use is limited due to fear of a 2.7% incidence of neutropenia and a 0.7% incidence of agranulocytosis. Filgrastim (G-CSF) is a granulopoiesis-stimulating factor often used in chemotherapy and associated with minimal side effects. Seriously mentally ill people are eight times more at risk of contracting HIV than the general population. **Objective:** To study the use of clozapine in schizophrenia patients concurrently on HAART medications and the role of filgrastim in rescuing patients with clozapine-induced agranulocytosis. **Methods:** A literature review was completed using key words like schizophrenia, HIV, clozapine and filgrastim to study the possible use of clozapine in patients on HAART medication. Also, the database of a large city psychiatric hospital was searched primarily for patients with refractory schizophrenia to look for cases with HIV and treatment-resistant schizophrenia on clozapine. **Results:** The literature review showed higher rates of HIV in schizophrenia patients. It revealed few case reports where filgrastim was used to rescue the patient from neutropenia while the patient was on clozapine. A search of our database showed very few cases of HIV, and none were on clozapine. This is a surprising figure since the hospital draws on a population with higher rates than average of both illnesses and treatment for HIV is easily accessed. Schizophrenia, particularly refractory schizophrenia, is ubiquitous in our hospital. **Discussion:** Finding no schizophrenic patients concurrently taking HAART and clozapine is surprising. Patients with HIV on HAART and with refractory schizophrenia may benefit from trial of clozapine. Hesitancy to use clozapine may be due to physicians' concern about potential drug-drug interactions or overgeneralizing the immunosuppression. There are nonoverlapping and nonsynergistic pathophysiological mechanisms for clozapine-induced agranulocytosis and HIV. HIV is a T-cell disease, and agranulocytois is a neutrophil problem not resulting in synergistic effect. No known drug interactions exist between filgrastim and FDA-approved HAART medications. There are no known interactions between filgrastim and clozapine. Based on these results and evidence from literature, we propose a theoretical model of using clozapine in HIV+ patients on HAART by dividing them into three categories based on WBC counts: 1) Normal WBC count: Start clozapine; if neutropenia develops, give filgrastim; 2) Benign Ethnic Neutropenia: Give lithium or filgrastim to increase the count and start clozapine; 3) Low WBC: Give filgrastim to increase the counts to normal level and start clozapine. **Conclusion:** Schizophrenia in HIV-positive patients is a serious health problem. The literature supports the use of filgrastim to address clozapine-induced agranulocytosis while allowing concomitant use of clozapine. Further research is needed in this field.

NO. 137

FOREIGN ACCENT SYNDROME (FAS) PRESENTING AS CONVERSION DISORDER: A RARE PRESENTATION

Lead Author: Abhishek Reddy, M.D.
Co-Author(s): Badari Birur, M.D., Richard C. Shelton, M.D.

SUMMARY:

Background: Foreign accent syndrome (FAS) is a rare disorder in the production of speech, secondary to

change in articulation and prosody. The change in prosody and articulation of speech is perceived by listeners to have a different accent, hence the name foreign accent syndrome. FAS incidents have been mostly reported secondary to TBI, stroke affecting the speech production regions of the brain. Very few reported cases of FAS have been associated with psychiatric conditions. In this rare case report, we present a case of FAS presenting as conversion disorder after ruling out organic pathology. **Case:** The patient is a 45-year-old female who presented to a hospital ER with depression due to a reported change in accent, which had progressed to abnormality in articulation and prosody that was perceived by listeners to have a different accent. The patient had a British-sounding "cockney" accent, which started after an emotional trigger (dissolution of her second marriage) in 2013 and subsequently required psychiatric hospitalization for depression with suicidal ideation. At the same time, the patient alleged an episode of physical maltreatment committed by a member of the psychiatric facility, following which she had speech abnormalities (stuttering) that remained for three or four days and then awoke the following morning with FAS. During psychiatric hospitalization for depression in July 2015, the patient had her accent varying from American to British and Australian. The patient believed she had aphasia and demanded a neurologic consultation. The difficulty in speaking that presented during the initial hospitalization subsided at discharge. The patient's speech was fluent and mostly grammatical with an unusual and variable English Cockney type/Australian accent remarkable with FAS. Volume and rate of speech were normal. **Methods:** Head MRI, EEG and lab work all failed to show an organic or neurological process underlying her variable foreign accent. General physical and neurological exams had been normal on multiple occasions. The MMPI-RF was significant for elevated somatization. A previous MMPI-2 personality profile was also consistent with somatoform disorder, with responses suggesting a strong tendency toward conversion disorder in response to emotional distress. In summary, neuropsychological evaluations were strongly indicative of FAS presenting as conversion disorder. **Conclusion:** This is a rare presentation of FAS presenting as a conversion disorder. The patient had significant differences in her articulation and prosody with an unusual and variable English Cockney/Australian type accent, which started secondary to an emotional trigger. Neuroimaging and EEG did not reveal any evidence of organic pathology. Personality testing and two independent neuropsychological/psychiatric and neurological evaluations supported a psychiatric etiology, namely FAS secondary to conversion disorder.

NO. 138

THE STALKER WHO BECAME HER OWN VICTIM: A CASE AND LITERATURE REVIEW ON STALKING PHENOMENOLOGY

Lead Author: Sonia Riyaz, M.D.

SUMMARY:

MM, a middle aged Caucasian female, was admitted to a local adult psychiatric unit postoverdose in the context of ongoing psychosocial and legal stressors. Despite a mild depressive episode in early adulthood, the patient appeared psychiatrically stable up until a year ago, when she was forced by her spouse to leave her home due to possible infidelity. Over the course of the next year, MM was reported to display unusual and impulsive behaviors as she continued to contact and engage in a relationship with her spouse. These behaviors were of such high severity that they led her spouse to obtain a restraining order. Over the next year, MM continued to violate the restraining order, which resulted in multiple arrests and incarcerations. Along with this new impulsive and reportedly uncharacteristic behavior, MM would report increased depression with suicidal ideation. There were two moderately serious suicide attempts by overdose during this past year. In fact, over the course of the year since the original incident, MM had spent much of the time either in various psychiatric facilities or in jail. MM had been placed on multiple psychotropic s with no benefits reported. Upon her most recent admission, MM continued to display poor insight, concrete thinking and preservative fixation on her spouse. While MM was aware of the restraining order and her spouse's reported feelings toward her, she continued to endorse the belief that she could change his mind. She engaged in writing him letters and making numerous calls in attempts to interact with him. She continued to report that she felt adamant that he would take her back if she could contact him. Interestingly, she was unable to acknowledge her problematic behaviors over the past year, including the severity of her suicide attempts and pending court issues. The providers working with MM tried to develop a psychiatric formulation of her mental state. While her fixed belief was thought at times to

be delusional, MM was able to understand that her fixation on her spouse was her own internal thinking and not shared by her providers. Providers also felt that while her belief was problematic, MM was able to understand the current reality and only struggled in processing that information toward her future actions. MM otherwise did not manifest psychotic symptoms. MM's depression was present only in the context of this specific stressor. There were no other displays of obsessive thinking or compulsive behaviors. Unable to understand MM's presentation using traditional *DSM-IV* diagnosis, the providers ultimately decided that her pattern of behavior over the past year could best be described as an example of extreme stalking. This poster will include a literature search and review on the phenomenology and current thinking about the psychological and psychiatric aspects of stalking behavior and the challenges of treating patients who present with these issues.

NO. 139

SIX WAYS TO DIE: A CASE REPORT OF A HIGH-LETHALITY MULTI-METHOD SUICIDE ATTEMPT

Lead Author: Diana Mungall Robinson, M.D.
Co-Author(s): Pamila Herrington, M.D.

SUMMARY:

Suicide is a major public health problem in the United States and globally. According to the CDC, in 2012, an estimated one million adults (0.5% of the U.S. adult population) reported making a suicide attempt in the past year. While lethality varies by method of suicide attempt, lethality is particularly high in cases with suicide attempt via multiple methods and polysubstance ingestions. DS is a 44-year-old male with a past psychiatric history of major depression and anxiety, including panic attacks. He presented to the University of Virginia ED via Pegasus Airlift as an alpha trauma after being found unconscious with a table saw cut and left hand amputation. En route, the patient reported a possible overdose on fluoxetine. He was admitted to the medical intensive care unit, and initial labs showed severe metabolic acidosis, anion gap, lactate gap, and elevated WBC and CK. The differential diagnosis included SIRS, lactic acidosis and ethylene glycol toxicity. Ethylene glycol levels were elevated, and fomepizole was given. On hospital day two, psychiatry was consulted. Reported symptoms included two months of worsening depressed mood and increased anxiety. The patient reportedly had planned the suicide attempt to overdose on fluoxetine. Then he overdosed on sodium percarbonate, hydrogen peroxide and antifreeze. Next, he cut his neck and wrist with a box cutter, then chose to amputate his left hand with a table saw. Once extubated, he was initially upset that his suicide attempt had failed. A mental status exam revealed severe psychomotor retardation, speech latency, poor eye contact, blunted affect, thought blocking and appearance of responding to internal stimuli. On hospital day five, he was transferred to the inpatient psychiatry unit, and he endorsed persecutory delusions that the government was after him. He was treated with risperidone, mirtazapine, and electroconvulsive therapy (four inpatient treatments). His mood improved, and he had a euthymic affect and a logical thought process prior to discharge. He was discharged to home on hospital day 19 with a diagnosis of severe MDD with psychosis. This case was particularly challenging, as the patient was found unconscious with direct and indirect clues to concomitant toxic ingestions. In the case of patient DS, an ethylene glycol ingestion was determined through a lactate gap despite lack of AKI. Early administration of fomepizole can be critical to reduce further damage from toxic alcohols while labs are pending. Furthermore, what the patient originally described as symptoms of anxiety and panic attacks were actually persecutory delusions indicative of psychosis that had not been treated. Anxiety is commonly comorbid with depression, but it is important for providers to obtain a thorough psychiatric history, including psychotic symptoms, to guide the treatment plan. Despite this patient's complicated presentation, an interdisciplinary coordinated approach led to a positive patient outcome.

NO. 140

ATYPICAL MANIA PRESENTATION: WAS IT CAUSED BY CORTICOSTEROIDS, A MYCOPLASMA INFECTION OR JUST LATE ONSET BIPOLAR DISORDER?

Lead Author: Laura Rodriguez-Roman, M.D.
Co-Author(s): Avjola Hoxha, M.D., Almari Ginory, D.O.

SUMMARY:

Background: In the assessment of abrupt changes in mental status, the differential diagnosis should always include organic illnesses, substance use and psychiatric diagnosis, but differentiating between these is not always easy. It is well-documented that glucocorticoids have neuropsychiatric side effects, including depression (more likely in women), mania,

delirium and confusion (more likely in men). It is also known that mycoplasma infections, one of the most common causes of pneumonia, can affect the central nervous system in approximately one in 1,000 patients. For a diagnosis of bipolar I disorder, a patient only needs to have one manic episode. The age of onset for bipolar I disorder ranges from childhood to 50 years, with a mean age of 30 years, but can still occur at an older age. Here, we report on a case of a patient with new onset mania in his 60s with a wide differential. **Case:** This is the case of a 62-year-old male with no previous psychiatric diagnosis who presented for infectious disease evaluation after seven weeks of altered mental status. He was on a cruise in the Caribbean when he developed vomiting, weight loss and a cough. He was hospitalized and treated for pneumonia upon his return. A couple of days after discharge, he became agitated, paranoid, hypersexual, hyper-religious and disorganized, with flight of ideas and pressured speech. Two weeks later, the patient was evaluated by a psychiatrist and started on quetiapine. During that same week, he was hospitalized, and the delirium workup was started. He was treated with nine different psychotropics, including haloperidol, alprazolam, olanzapine and risperidone, among others; however, his symptoms persisted. The decision to transfer the patient to a tertiary center for a higher level of care was made. At this center, the medical workup was expanded to include varicella zoster, malaria, Lyme, bartonella, mycoplasma, HIV, syphilis, arbovirus, chikungunya, leptospirosis, paraneoplastic syndromes and NMDA encephalitis. Brain MRI, chest x-ray, abdominal CT, EEG, LP, CBC, CMP, sedimentation rate and CRP were also performed. Only the sedimentation rate and mycoplasma IgG were positive, for which ID started doxycycline. At the same time, valproic acid was started and haloperidol tapered. The patient was transferred to the psychiatric unit, were he began to improve and was eventually discharged on a combination of quetiapine, valproic acid and doxycycline. **Conclusion:** The differential diagnosis of mania in an elderly individual is large. Medical conditions such as steroids, pneumonia and neurological conditions, to name a few, must be considered before mania is considered a primary psychiatric illness. Treatment consists of ruling out medical conditions while treating the symptoms so they do not affect further medical management. We will discuss the differential diagnosis and workup for patients with similar presentations.

NO. 141

RITUALISTIC BEHAVIOR LEADING TO LONG-TERM HOSPITALIZATION IN PATIENTS WITH SCHIZOAFFECTIVE DISORDER

Lead Author: Daniel O. Roman, M.D.
Co-Author(s): Amina Hanif, M.D.

SUMMARY:
Obsessive-compulsive disorder (OCD) is a psychiatric disorder defined by recurrent thoughts (obsessions) and repetitive behaviors (compulsions) that cause anxiety or distress. It is a common comorbidity with the schizophrenia spectrum disorders, with prevalence rates ranging from 7.8% to 40.5%. Epidemiologic and neurobiological evidence suggests that patients with these comorbid disorders, recently coined “schizo-obsessive” may represent a special category of the schizophrenia spectrum population. Persistent obsessive-compulsive symptoms have been consistently shown to be a powerful predictor of poor prognosis in these patients. Here we describe a case of a 30-year-old African-American woman with a long history of schizoaffective disorder who presented with disorganized thought process, extensive grandiose delusions, religious preoccupation, and several complex and unusual ritualistic behaviors—including compulsive walking around or behind people, carrying sheets of paper filled with scribbles of numbers and names, and overusing the phone—in the context of noncompliance with psychiatric treatment. Throughout the course of her hospitalization, psychopharmacological and psychotherapeutic management was optimized to treat her symptoms, but the ritualistic behaviors proved to be the ones to minimally respond to treatment, and she was subsequently transferred to a long-term inpatient psychiatric facility. This poster will aim to discuss the complex symptomatology and treatment course as well as difficulties faced when treating such a challenging case on the inpatient service.

NO. 142

REFRACTORY CATATONIA: ROLE OF N-METHYL-D-ASPARTIC ACID ANTAGONIST

Lead Author: Kamalika Roy, M.D.
Co-Author(s): Deepti Challagolla, M.D., Stephen Warnick, M.D., Richard Balon, M.D.

SUMMARY:
Background: Catatonia is a neuropsychiatric symptom constellation described as a separate

disease entity, as well as a specifier of brief psychotic disorder, schizophreniform disorder, schizophrenia, major depressive disorder, and bipolar type I and II disorders in *DSM-5*. Though catatonia has been associated with schizophrenia since the 19th century, it is most often seen in affective disorder and underlying neurological and medical condition. Benzodiazepines and electroconvulsive therapy have been the mainstay of treatment for ages. We describe a case of refractory catatonia where we observed resolution of symptoms with N-methyl-D-aspartic acid (NMDA) antagonist memantine. **Case:** A 47-year-old man with a history of schizophrenia was admitted to the medicine floor directly from his primary care physician's office with concerns about weight loss of 20 pounds and mental status changes. Psychiatry was consulted for evaluation of schizophrenia. He was regularly taking haloperidol 5mg twice daily. He stopped activities of daily life, including eating, for one week. He was withdrawn, with no verbal communication for the previous three weeks. On examination, he showed stupor and extreme negativism. He answered a few of the questions with "yes or no," without eye contact. He had fixed gaze at the television, verbigeration, echolalia, automatic obedience and waxy flexibility. His Bush Scale score was 39. His vitals were normal, and routine blood tests were within normal limits. He had ataxic gait for years, attributed to chronic use of alcohol in the remote past. The medical team investigated possible malignancy, as his weight loss and emaciated body habitus were striking. All the investigations, including computed tomography scans of his chest, abdomen and thorax, were normal. We started lorazepam 1mg PO thrice daily for catatonia. It was gradually increased to 2mg IV push four times daily for persistent symptoms. Haloperidol was discontinued. On day 14, his Bush Scale score was 34 with minimal improvement in oral intake. On day 15, we started memantine 10mg twice daily for its effect on proposed glutamate hyperactivity. He started eating two meals a day, spontaneously. There was significant improvement of withdrawn behavior, mutism and echolalia, with a Bush Scale score of 20 on day 17. Quetiapine was started on day 18. He was discharged on day 30 on quetiapine 200mg QAM and 600mg QHS, memantine 10mg twice daily, and lorazepam 1mg twice daily, with a Bush Scale score of 12. **Discussion:** The addition of memantine demonstrated significant improvement in the motor and affective symptoms of a refractory catatonic state, which did not respond adequately to a tolerable dose of lorazepam. This supports the neurobiological theory of gamma-aminobutyric acid hypoactivity in the frontal cortex and glutamate NMDA hyperactivity in the parietal cortex. It is important to compare its efficacy with that of standard treatment with benzodiazepine and newer antipsychotics.

NO. 143

NEGATIVE COUNTERTRANSFERENCE IN BORDERLINE PERSONALITY DISORDER: CASE REPORT, LITERATURE REVIEW AND TREATMENT RECOMMENDATIONS

Lead Author: Kruthika Sampathgiri, M.D.
Co-Author(s): Carolina Retamero, M.D., Lakshit Jain, M.D., Patricia Serrano, M.D.

SUMMARY:

Background: Borderline personality disorder (BPD) is a common diagnosis in inpatient psychiatric units, with a prevalence of 15 – 25% of inpatients. These patients present with chronic suicidality, impulsivity, intense anger and unstable interpersonal relationships resulting in frequent voluntary and involuntary admissions. In addition to these clinical features, chronic feelings of abandonment and marked mood reactivity often lead to significant feelings of countertransference among the treatment team. **Case:** A 37-year-old patient with a history of borderline personality disorder, PTSD and metastatic carcinoma of colon s/p colon resection with colostomy in situ and a long history of foreign body ingestion presented to the emergency department three times with intentional foreign body ingestion over the course of one month. During all three admissions, he reported this as "something I always do, due to my anxiety." The patient was also perseverant on obtaining pain medication, with oxycodone 30mg every six hours as his choice of pain control. The patient exhibited bargaining and medication-seeking behavior pertaining to oxycodone, and the treatment team discharged him each time with no more than a two-day supply with close follow-up with his primary care practitioner. The patient reported he was under ongoing dialectical behavioral therapy (DBT) as an outpatient since 2008, but was not forthcoming with compliance to treatment. During each of his admissions, the patient was anxious, irritable and insistent on a short course of stay and discharge from the unit ASAP, only to return with the same presentation within a short period. He was difficult with the nurses and treatment team and required a

great amount of redirection. **Discussion:** With three hospitalizations within a span of one month, med-seeking behavior and insistence on short inpatient stay by the patient, there is a potential for significant countertransference in our case, which could affect the treatment plan and discharge arrangements. While hospitalization is a risk factor for suicide in patients with BPD and outpatient DBT is the treatment of choice for patients with BPD, the goal for our treatment was focused on "damage control," "de-escalation of peers," long talks to the treatment team members to educate them about personality disorders and to continue the therapeutic relationship between the patient and his outpatient team. Administering therapy in an inpatient unit remains a challenge, with increased patient load and decreased number of beds requiring a quicker turnaround. While there is a possibility to administer DBT on an inpatient unit, other steps can be taken to minimize conflict during patient stay. Adequately addressing the mechanism for countertransference will prevent caregiver fatigue among the primary team and ensure a good rapport.

NO. 144

A CASE OF A PATIENT WITH K2 USE PRESENTING WITH PROLONGED DELIRIUM

Lead Author: Eric Santos, M.D.
Co-Author(s): David A. Aguilar, M.D., Vanessa Guerrero, M.D., Raj Addepalli, M.D.

SUMMARY:
Synthetic cannabinoids (SC) have begun to skyrocket in recent years. Compared to THC, SC are more potent, efficacious CB1 agonists and have a longer half-life, which may lead to greater cannabinomimetic toxicity. Great variability in the content, concentration and range of possible SC compounds increases risk of toxicity. There have been a wide range of reported adverse effects associated with intoxication by SC-containing products, ranging from tachycardia, hypertension and panic attacks to more severe effects such as agitation, hallucinations, psychoses, seizures, acute kidney injury, mania, delirium, encephalopathy, myocardial infarction and even death. There has been a significant rise of K2 intoxication cases seen recently in the ED of Lincoln Hospital, located in the South Bronx of NYC, with a number of these cases having persistent psychotic symptoms that require inpatient psychiatric hospitalization, most of which have resolved within one to two weeks. This case is unique in that this patient had persistent schizophrenia-like symptoms that persisted for several months despite cessation of continued K2 use. Mr. T.B. is a 25-year-old man of Gambian descent, single, domiciled and unemployed, with no PPH except cannabis and K2 abuse for several months, who was BIBEMS activated by his brother due to disorganized behavior in September, 2014. As per family members, the patient started having behavioral changes in April, 2014. Upon initial assessment, the patient was alert and oriented in person and place, but he recognized hospital staff as family members and friends. He was disorganized and was admitted to the medicine inpatient unit. His toxicology was negative for THC, PCP, cocaine, opiates, methadone, barbiturates and benzodiazepines. RPR, cobalamin, folate, electrolytes and a CT scan of the head were all found within normal limits, and ammonia was slightly elevated (value of 53). The patient was reported to be sexually preoccupied and constantly masturbating on the floors. The patient was re-evaluated by psychiatry and neurology and found to be delirious. MRI, EEG, lumbar puncture and PET scan were negative. Anti-NMDA receptor encephalitis was also ruled out. The patient continued to be delirious for two weeks. Haloperidol 2.5mg BID was started. His symptoms improved to the point where he was no longer delirious, but he continued to exhibit auditory hallucinations and was admitted to the inpatient psychiatric ward. The patient remained there for 20 days, where he was switched to risperidone 2mg BID until his symptoms resolved and he became stable for discharge. **Discussion:** K2 use can present as delirium and lead to unnecessary work up to rule out other causes. If aggressive antipsychotic therapy could be beneficial for patients with new onset psychotic behavior on acute intoxication with K2, leading to shorter length of stay in the hospital and faster return to the community, is unclear at this point.

NO. 145

CASE REPORT OF NEUTROPENIA IN A PATIENT DIAGNOSED WITH SCHIZOPHRENIA AND TREATED WITH LURASIDONE

Lead Author: Ayesha Sattar, M.D., M.B.B.S.
Co-Author(s): Pranathi Mruthyunjaya, M.D., Fadalia Kim, M.D.

SUMMARY:
Background: Atypical antipsychotics are commonly used for the treatment of schizophrenia and related disorders. Two of the potentially fatal side effects

caused by atypical antipsychotics are leukopenia and neutropenia. Drug-induced neutropenia may be caused by direct toxic effects on the bone marrow, peripheral destruction or antibody formation against hemopoietic cells or its precursors. Lurasidone is a newer antipsychotic drug that has not shown any side effects of neutropenia in trials. This is a case report of a patient developing neutropenia while on treatment with lurasidone. **Objective:** To increase awareness of possible side effects during lurasidone-treated schizophrenia and to stress importance of vigilance during treatment. **Methods:** Case report of a patient treated for schizophrenia with lurasidone. **Results:** The patient developed neutropenia, which was resolved once the causing agent was stopped. **Discussion:** This is a case report of a 35-year-old Caucasian male with an approximate 20-year history of schizophrenia. After numerous trials with various antipsychotics, partial remission of psychotic symptoms was obtained with lurasidone. He developed neutropenia after two weeks of therapy with the drug, and his condition improved once lurasidone was stopped. This case study addresses the presentation, diagnostic criteria, treatment and prognosis of neutropenia in the setting of treatment of schizophrenia with lurasidone. **Conclusion:** We conclude that Lurasidone can cause neutropenia in some patients, likely due to similar etiology as other antipsychotic agents.

NO. 146

CASE REPORT OF "FOLIE A DEUX" BETWEEN TWO SISTERS

Lead Author: Adam H. Schindzielorz, M.D.
Co-Author(s): Kamal Patel, M.D., Suzanne Holroyd, M.D.

SUMMARY:

Background: Folie a deux is described as the transfer of delusional beliefs from one person—the primary patient—to another—the secondary patient—who is closely related. Often, this illness is seen within family groups, but also in individuals with other bonds of relationship. **Case:** We present a case of a 77-year-old homeless female and her sister, who initially presented to the hospital with worsening of symptoms associated with a recent diagnosis of myasthenia gravis. However, upon interview, the patient detailed a story of kidnapping and extortion that was ultimately determined to be a shared psychotic delusion. Her psychosis was further validated when the sisters became paranoid of hospital staff, suggesting that her perceived aggressors were manipulating hospital staff. The pair was eventually lost to follow-up. **Discussion:** Folie a deux, also known as delusional symptoms in partner of individual with delusional disorder in the Diagnostic and Statistical Manual of Mental Disorders, is a rare yet challenging disorder that was first described by Lasegue and Flaret. Folie a deux was further classified into four subtypes by Granlick: Subtype A – Folie Imposee, Subtype B – Folie Simultanee, Subtype C – Communique and Subtype D – Folie Induite. This case validates previous literature suggesting that the illness is more common in families as well as those within the impoverished, in particular, homeless, demographic. Additionally, folie a deux is a rare presentation with high prevalence of depressive and anxiety disorders in patients with myasthenia gravis.

NO. 147

FOREIGN ACCENT SYNDROME AS AN UNDER-RECOGNIZED MANIFESTATION OF CHRONIC PSYCHOLOGICAL TRAUMA

Lead Author: Alexis A. Seegan, M.D.
Co-Author(s): Ijeoma Chukwu, Andrei Novac

SUMMARY:

Foreign accent syndrome (FAS) is a rare condition where a person adopts an accent they did not have previously, and both neurologic and psychological factors are cited as potential causes. We present two individuals with FAS who both experienced significant traumas and posit that the development of FAS in each was the result of their trauma. The first patient is a 35-year-old woman with a rare metabolic defect requiring multiple medical hospitalizations beginning at a young age and eventually requiring renal and hepatic transplants. Over the course of a year, she developed a British accent, despite never having lived or traveled outside of California, and could not explain her accent, nor did it concern her. The second patient is a 36-year-old Puerto Rican female with traumatic brain injury and PTSD resulting from a fall down a flight of stairs. She suffered neurologic and psychiatric sequalae from her accident, including speech difficulties, aggression and labile mood. Several months after her accident, she began to speak with a British accent, although she had no history to explain this sudden occurrence. Both patients experienced traumatic events with resulting loss of personal control and subsequently unconsciously adopted foreign accents. Foreign accent syndrome may be considered a rare but likely

under-recognized manifestation of chronic psychological trauma.

NO. 148

THE CASE OF THE BRIGHT SPLENIUM

Lead Author: Patricia Serrano, M.D.
Co-Author(s): Sridhara Yaddanapudi, M.D.

SUMMARY:

Background: Altered mental status is a frequent reason for consult for neurological and psychiatric services. Multiple causes can be considered, including Wernicke's, hepatic encephalopathy, metronidazole-induced encephalopathy and acute demyelination. We present the case of a 49-year-old Hispanic female with end stage liver disease admitted for altered mental status. neurology and psychiatry were consulted. **Case:** She had been at an outside hospital one week prior, where she had been treated with metronidazole and ciprofloxacin for C. difficile. Since discharge, she had worsened with altered sleep-wake cycles and confusion. On the morning of her admission, her family could not wake her. On admission, she would awaken to noxious stimuli, immediately falling back to sleep. She was hyperreflexic with bilateral ankle clonus and Babinski. Her neck extensors were stiff. No twitching or jerking was noticed. Her ammonia level was 36.5mcmol/L. EEGs showed generalized slowing. Head tomography did not show any acute findings. Lumbar puncture was negative except for mildly elevated protein of 63mg/dl. MRI showed T2 hyperintense signal associated with restricted diffusion of the splenium of corpus callosum. Given that the patient was receiving metronidazole, our initial diagnosis was metronidazole-induced encephalopathy, but after stopping metronidazole, she did not improve. Most reported cases have excellent recovery. This prompted us to delve deeper. Her total dose of metronidazole was 15g over 10 days. In most reported cases, the dose was actually much higher and the duration much longer. We obtained reports from the prior hospitalization. Sodium upon discharge was 141mg/dl. Her sodium on arrival was 156mg/dl. Also in spite of her family denying the patient's alcohol use in the past three months, her ethanol levels at the outside hospital were 127mg/dl. She had been treated at our institution upon admission for presumptive Wernicke's with a high dose of thiamine IV. Based on this new history and MRI, our diagnosis was extrapontine myelinolysis (EPM). A follow-up MRI showed no improvement. We considered the damage permanent, and when goals of treatment were discussed with the family, she was discharged to hospice care. **Discussion:** EPM, even though it is often a cause of rapid hyponatremia correction, may also present in patients with a history of chronic alcoholism. In this case, the condition is often unrelated to correction of sodium. EPM can present with rigidity of limbs, bradykinesia, tremors and decreased blinking. Some of the behavioral manifestations are inappropriate affect, disinhibition, delirium and, in rare cases, catatonia. Treatment is supportive, addressing underlying conditions. Complex cases such as this one require an interdisciplinary approach with efficient communication among consultants, the primary team and caregivers; careful observation and documentation; a detailed history; and review of prior records to provide appropriate care.

NO. 149

PSYCHOSIS RESULTING FROM FAHR'S SYNDROME: CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Apeksha Shah, M.B.B.S.
Co-Author(s): Shivam Dubey, M.D., Abhishek Rai, M.D., Piyush Das, M.D.

SUMMARY:

Fahr's syndrome is a rare, inherited or sporadic neurological disorder characterized by abnormal deposition of calcium in areas of brain controlling movement, especially basal ganglia. The other areas of brain affected by this syndrome are the dentate nuclei, putamen, thalamus and cerebellum. Prevalence of this disease is less than 1 per 1,000,000 people. It is usually asymptomatic but may present with extra pyramidal syndrome, psychosis, cognitive deficits, mood symptoms and seizures. We present a case of Fahr's syndrome in a 20-year-old male who presented with symptoms of acute psychosis. There are a few previous case reports on Fahr's syndrome with "psychotic presentation," and to the best of our knowledge, we present the fourth such case. We also performed a literature review on the most recent diagnostic criteria, various symptoms associated with Fahr's syndrome, differential diagnosis and symptomatic management options of this rare disorder.

NO. 150

WITHDRAWN

NO. 151

THE IMPORTANCE OF CONSIDERING DELIRIUM DUE TO POLYPHARMACY IN PSYCHIATRIC PATIENTS WITH NEUROLOGIC DISORDERS: A CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Anna P. Shapiro, B.A.
Co-Author(s): Dewey S. Murphy, M.D., Suzanne Holroyd, M.D.

SUMMARY:
Polypharmacy, unfortunately, is common in the treatment of severe and refractory cases of schizophrenia or schizoaffective disorder. It has been shown that those patients prescribed multiple medications are also prescribed higher dosages. Polypharmacy and increased dosages are associated with increased risk of delirium, movement disorders (bradykinesia, Parkinsonism, dyskinesia, akathisia, gait disorders), hypotension, metabolic syndrome and life-threatening conditions such as neuroleptic malignant syndrome. Those with underlying brain disorders or neurologic conditions may be even more predisposed to having such deleterious side effects. However, side effects in those with neurologic conditions may be overlooked, as the side effects may be attributed either to the neurologic condition or the underlying psychiatric diagnosis. Normal pressure hydrocephalus (NPH) is a neurologic disorder of ventricular enlargement due to subarachnoid obstruction, resulting in the triad of incontinence, shuffling gait and decreased cognition. These symptoms are believed to be due to the stretching of periventricular fibers, changes in blood supply and reduced brain metabolism. Treatment to relieve these symptoms is aimed at decreasing ventricular pressure, traditionally by ventricular-peritoneal shunt. We describe the case of a 50-year-old male with a thirty-year history of severe schizoaffective disorder with mania who had been living for some years in a state hospital setting. He was admitted to a community hospital medical service due to altered mental status and falling. His gait had been altered for several weeks before admission, and he also developed changes in mental status with worsening cognition. Work-up included an MRI showing significant cortical atrophy and ventricular dilation, leading to a tentative diagnosis of NPH. However, neither acetazolamide treatment nor CSF removal by lumbar puncture resulted in any improvement of the patient's gait or mental state. His symptoms were then felt to be a combination of his NPH and underlying schizoaffective disorder, with little hope for recovery. However, he was also being treated with high doses of valproic acid, quetiapine, olanzapine, haloperidol decanoate, IM depo-provera, lorazepam, sertraline and bupropion, as well the recently added acetazolamide. He was seen by the psychiatric consult team, which diagnosed delirium and recommended dramatic decreases in his medications. This resulted in the patient having dramatic improvement of cognition, mental status and gait. Although the patient was still felt to have underlying NPH, which likely predisposed him to delirium from his medications, his symptoms were due to overmedication/polypharmacy rather than NPH or his schizoaffective disorder. This case highlights the importance of considering medications as a cause of mental status changes or worsening gait, even in patients with coexisting diagnosed neurologic disorders.

NO. 152

LITHIUM-INDUCED DENTAL COMPLICATIONS

Lead Author: Ashish Sharma, M.D.
Co-Author(s): Sara K. Schenk, Ismatt R. Niazi, Katherine E. Palmisano

SUMMARY:
Case: Our patient, Ms. A., was a 60-year-old White female with a past psychiatric history of bipolar type II disorder and OCD who was admitted to the ICU after a suicide attempt by overdosing on unknown quantities of venlafaxine, gabapentin and lorazepam. The attempt was nearly fatal, requiring intubation. She has had two previous suicide attempts, including one by cutting her wrists when in college and one she could not remember the details of at age nine. Her past medical history was significant for diabetes mellitus, well-controlled with diet, and hypothyroidism, controlled on natural thyroid replacement. Her labs were normal. Ms. A. was diagnosed with bipolar disorder in her early twenties. She was stable on monotherapy with lithium for 9 to 10 years, but had to stop due to dentition problems. She reported that over the course of her lithium treatment, which was always maintained in a therapeutic range, her teeth began to decay and ultimately required extraction. Furthermore, her diabetes was well-controlled with diet, and her thyroid profile was normal. There was no history of smoking or illicit drug use. She described herself as a social drinker. No other etiology contributing to her dental decay could be demonstrated at that time. Most recently, she had been on quetiapine XR 600mg, venlafaxine XR 300mg and natural thyroid replacement therapy.

Discussion: Lithium-induced tooth decay, changes in tooth structure, caries or periodontal disease have been documented in a few dental literatures, but have never been published in the medical literature. Our PubMed search of medical journals did not reveal any findings. Chronic lithium treatment can result in loss of the mineral content of dentin, a major component of teeth that supports enamel. This demineralization causes dentin to become soft, although it has no effect on its mass. It is noteworthy that not all patients treated with lithium develop dental complications. Dentin decalcification has been documented in patients on lithium as early as 14 months into treatment. The exact mechanisms by which lithium causes dentin decalcification remain unclear, and it is proposed that some predisposing conditions, including thyroid hormone abnormalities or genetic factors, could be playing a role. Hyposalivation and xerostomia have also been implicated as causative factors for lithium-induced dental caries. The lithium ion causes a decrease in solubility of hydroxyapatite, the main mineral constituent of dentin and enamel. However, in one of the studies, the duration of lithium therapy was poorly correlated with the degree of salivary gland dysfunction and the caries activity index. As a result, preventive dental education, saliva substitutes and anticaries agents are recommended in patients on chronic lithium treatment, as well as careful monitoring, frequent dental examinations and appropriate management of dental lesions.

NO. 153

PHARMACOGENOMIC TESTING PREDICTS A MORE FAVORABLE CLINICAL OUTCOME IN A PATIENT WITH TREATMENT-RESISTANT DEPRESSION AND "BORDERLINE PERSONALITY"

Lead Author: Matthew M. Sheehan, B.A.
Co-Author(s): Joachim A. Benitez, M.D.

SUMMARY:

Background: Major depressive disorder (MDD) is a common psychiatric condition that often severely impairs social and occupational functioning. Only 40% of patients with MDD who are treated will experience complete remission of their symptoms. Of the 60% of patients who do not initially respond, 50% will then fail to respond to a second antidepressant. Many factors have long been known to contribute to the variation in response to antidepressants, including renal and hepatic function, drug-drug interactions and comorbid psychiatric disorders. Recently, pharmacogenomic profiles have identified various genes that influence the metabolism of and response to antidepressant medications in the treatment of depression. We present a patient with treatment-refractory MDD whose pharmacogenomic profile effectively guided our antidepressant choice, resulting in remission of her symptoms. **Case:** This is the case of a 46-year-old woman with a past psychiatric history of MDD, bulimia nervosa and borderline personality disorder (BPD) who presented to our partial hospital following discharge from her fourth psychiatric hospitalization for suicidal ideation with a plan in the setting of a severe depressive episode. Despite ongoing pharmacotherapy and various modalities of psychotherapy, her depressive symptoms worsened and her binge-purge and self-mutilating behaviors persisted. We decided to pursue pharmacogenomic testing of genes that influence antidepressant metabolism and response: five cytochrome P450 genes (2D6, 2C19, 3A4, 2B6, 1A2), the serotonin transporter gene (SLC6A) and the serotonin 2A receptor gene (HTR2A). Our patient's pharmacogenomic panel identified only three genetically optimal antidepressants, none of which she had been trialed on in the past. She was then started on desvenlafaxine (Pristiq), and soon after, her depressive symptoms started to vastly improve. **Discussion:** Pharmacogenomic panels provide guidelines for individualized medication treatment choices that predict improved clinical outcomes in depressed patients. Given that our patient's genetically determined pharmacokinetic and pharmacodynamic profiles influenced her response to many antidepressants, it is understandable that she had a poor response to her previously trialed regimens. Further, given her comorbid BPD, one would perhaps expect a poor or inconsistent response to medication, given that the current literature suggests antidepressant therapy is less effective in the setting of comorbid BPD. It is possible that our patient's treatment-refractory depressive symptoms were attributed to her BPD and not identified as evidence of inadequate response to her antidepressant therapy. This case demonstrates the potential impact of pharmacogenomic testing to not only avoid the trial-and-error approach to antidepressant therapy, but also to provide patient-specific treatment plans to prospectively predict more favorable outcomes with carefully selected pharmacotherapies.

NO. 154

NEUROPSYCHIATRIC MANIFESTATIONS OF WILSON'S DISEASE IN THE INPATIENT HOSPITAL SETTING

Lead Author: Sarah Sheikh, M.D.
Co-Author(s): Lara Addesso, M.D., Daniel Kohn, James Kostek, Asghar Hossain, M.D.

SUMMARY:
Background: Wilson's disease (WD) is an autosomal recessive illness characterized by excess copper accumulation in the brain, liver and other tissues. WD is attributed to a defect in the ATP7B gene located on chromosome 13. ATP7B encodes an ATP-dependent copper transporting transmembrane protein mainly expressed in hepatic tissue. WD is typically manifested in two clinical forms: neurological and hepatic. Psychiatric symptoms occur prior to, concurrent with or after diagnosis and initiation of treatment. WD can remain undiagnosed for an extensive period of time if disguised with exclusive psychiatric symptoms. Common psychiatric symptoms of WD include, but are not limited to, anxiety, mood disorders, psychosis and/or catatonia. WD is clinically evident in childhood or adolescence, usually before the age of 40. Formal diagnostic criteria were reviewed and outlined by Roberts and Schilsky (2008) Without treatment, WD is a fatal disease; patients succumb to either liver failure or complications of their neurological illness. Chelation therapy could prevent a fatal outcome; thus, early detection is of utmost critical importance. **Objective:** The aim of this case study was to elaborate on psychiatric manifestations of Wilson's disease, with a focus on psychosis. Through extensive literature review of documented psychiatric manifestations, a potential superior treatment for said symptoms could become possible, and earlier diagnosis can be made. **Case:** We present the case of a 29-year-old Caucasian male with a past medical history significant for documented diagnosis of Wilson's disease and diagnosis of schizophrenia-paranoid type with a history of multiple hospitalizations. Psychiatric symptoms consisted of psychosis with delusions, homicidal ideation, suicidal ideation, disorganized behavior, aggressive behavior and self-mutilation. The patient's delusions were mostly somatic and consisted of believing that he, his mother and his grandmother were infected with congenital syphilis due to his physical appearance (despite lack of physical or clinical evidence) and a self-diagnosis of bilateral interstitial keratitis. He has a history of self-mutilation and picking behaviors involving removal of moles from his body, which he attributes to syphilis as well as a self-circumcision that occurred approximately three years ago. The patient also believes he does not need psychotropics; thus, compliance is very poor. Although the patient has history of extensive suicidal ideation, there have been no attempts. **Conclusion:** Manifestations of exclusive psychiatric symptoms without blatant hepatic or neurologic involvement could lead to misdiagnosis. An enhanced understanding of the psychiatric presentations in WD could provide greater comprehension of the enigmatic mechanisms of psychiatric disorders. By increasing awareness of WD psychosis manifestations, earlier and accurate diagnosis can be established.

NO. 155

DIFFERENTIATING BETWEEN PSYCHIATRIC DISORDERS AND WERNICKE-KORSAKOFF SYNDROME: A CASE REPORT

Lead Author: Manisha Shenava, M.D.
Co-Author(s): Pietro Miazzo, M.D.

SUMMARY:
Background: Wernicke-Korsakoff syndrome (WKS) is a well-known, under-diagnosed, preventable syndrome often times mimicking and mistaken for psychiatric disorders. By presenting this case, we plan to highlight difficulties in differentiating psychiatric disorders from WKS, emphasizing that oral thiamine is not sufficient and IV or IM thiamine should be administered, and by doing so, hope to decrease the number of undiagnosed patients. **Case:** A 54-year-old Caucasian male with a past medical history of unknown psychiatric illness and alcohol abuse had been admitted to a medical floor secondary to a fall and altered mental status. While on the medical floor, the medical team consulted psychiatry for "psychosis" in the context of altered mental status. The patient was a poor historian and appeared to be internally preoccupied. He was observed to be thought blocking. A threatening comment was noted, and when asked about it by the consult team, the patient was unable to answer. He was not exhibiting withdrawal symptoms. The patient was started on an oxazepam taper and given folate, thiamine and multivitamins orally. The patient was involuntarily committed to a psychiatric facility after being deemed medically clear. The patient had finished his oxazepam taper on the medical floor. On arrival to the psychiatric unit, the patient was mute and could not talk. A one-time dose of lorazepam was given for suspected

catatonia. The patient responded several hours later. The patient was very difficult to obtain information from and could not recall why he was in the hospital. Information from family was also difficult to obtain due to minimal support systems. Lorazepam 1mg PO TID and a low dose of haloperidol (3mg PO HS) were started. The patient became slightly more verbal, but still information was difficult to obtain. A Montreal Cognitive Assessment (MOCA) was given, and the patient scored a 22/30. Neurology was consulted, and a diagnosis of WKS was made. The patient was transferred to the medical floor for IV thiamine infusion. The patient's prognosis was deemed poor, and he was discharged to a personal care home. **Discussion:** This case underlines the difficulty in differentiating WKS from psychiatric disorders. Ophthalmoplegia may be mistaken for responding to internal stimuli, while minimal to no content in conversation may be seen as catatonia. Additionally, amnesia and confabulation may be mistaken for thought blocking and/or paranoia. Also, while thiamine is routinely given to alcoholic patients, those who have WKS require IV or IM routes of administration. Finally, although WKS is most commonly found in alcohol abuse, it can also be found in patients with gastrointestinal diseases, surgery at the site of thiamine absorption (jejunum and ileum), eating disorders, HIV-AIDS, etc. Heightened awareness to these multiple factors may prevent patients from progressing into the catastrophic syndrome.

NO. 156

VALPROIC ACID-INDUCED DELIRIUM: A CASE STUDY

Lead Author: Saoda Shuara, M.D.
Co-Author(s): Muhammad Ishaq, M.D., Clayton Morris, M.D.

SUMMARY:
Valproic acid (VPA) is used in psychiatry as a mood stabilizer and it is widely recognized for its efficacy in the management of mania. However, VPA has numerous drug interactions and toxicities, a serious one being hyperammonemia. A byproduct of VPA metabolism causes inhibition of the rate-limiting enzyme for the urea cycle, resulting in increased ammonia levels. Clinical presentation of hyperammonemia can involve altered mental status along with varying degrees of cognitive and behavioral dysfunction. The diagnosis of VPA-induced hyperammonemia is often overlooked due to its complex clinical presentation, which may include serum valproate levels within therapeutic range and normal liver enzymes. Here, we describe such a case, where a 53-year-old female with no previous liver abnormalities developed altered mental status and behavioral dysfunction from hyperammonemia during her treatment with VPA. She initially presented to the hospital with manic symptoms and psychosis and upon admission was started on VPA. We were able to witness the entire course of her illness during her two-month inpatient stay, and this allowed close observation of her mental status alterations, behavioral changes and lab abnormalities induced by VPA. She began exhibiting new-onset confusion and disorientation, and her behavior progressively became more and more disorganized to the point where she was placed on one-to-one supervision for safety. After conducting further lab work, her ammonia levels appeared elevated, and within 10 days of discontinuation of VPA, the patient's delirium cleared. Despite the widespread use of VPA in psychiatric disorders, minimal literature has reviewed the association with VPA and delirium in psychiatric patients. The objective of this case study is to educate vigilance on abnormal behavioral effects in patients receiving valproic acid.

NO. 157

CLOZAPINE REFRACTORY SCHIZOPHRENIA: AUGMENTATION THERAPY WITH FLUPHENAZINE

Lead Author: Gurjot Singh, M.D.
Co-Author(s): Faisal Islam, M.D.

SUMMARY:
Objective: A case report discussing augmentation of clozapine with fluphenazine and literature review to understand the treatment modalities available for clozapine-resistant schizophrenia. **Case:** R.G. was a 41-year-old Hispanic male with a long-standing history of schizophrenia paranoid type for an unspecified number of years. He had a history of more than 15 inpatient psychiatric hospitalizations. He got admitted to our hospital again for worsening of command auditory hallucinations—multiple voices telling him to hurt people. He was reportedly compliant to his medications and follow-up. His psychiatric medications included clozapine 300mg twice daily. He had no substance abuse history. On MSE, the patient was responding to internal stimuli and expressed homicidal ideation to hurt people. His thought process was circumstantial and expressed auditory command type hallucinations to hurt people. Patient endorsed fair insight with poor judgment. Admitting diagnosis: Axis I: schizophrenia,

paranoid type; Axis II: deferred; Axis III: HTN, DM2, hypothyroidism; Axis IV: unemployment, financial problems; Axis V: GAF 21. He was admitted voluntarily to the inpatient unit and was continued on the same dosage, as clozapine dose could not be increased due to increased risk of agranulocytosis. It was then planned to start him on fluphenazine 5mg at bedtime, which was later increased to 10mg at bedtime. Gradually, the patient felt markedly better, appearing calm and cooperative, with brighter affect. His WBC stayed within normal limits; he was placed on a monthly monitoring schedule for WBC and ANC. He was discharged with clozapine 300mg twice a day and fluphenazine 10mg at bedtime. During admission, the patient was assigned a Clinical Global Impression-Severity (CGI-S) rating of 6; the patient was markedly ill and exhibited impaired social function. Subsequent to clozapine augmentation with fluphenazine, the patient gradually started feeling better, with general improvement in his psychotic features and functioning. The patient was discharged at a CGI-I rating of 2 with plan to follow up at OPC. **Conclusion:** The augmentation armamentarium includes select agents of varying efficacy. Although more trials will be needed to establish long-term viability of fluphenazine augmentation therapy, our case report provides an example of a patient who benefited markedly from a trial with fluphenazine. Future studies may further elaborate upon the hierarchy and dosing of specific medications with respect to partial responders and/or nonresponders of clozapine.

NO. 158

K2/SPICE-INDUCED SEIZURES: TIP OF AN ICEBERG

Lead Author: Jasbir Singh, M.D.
Co-Author(s): Satneet Singh, M.D., Amandeep Singh, M.D., Evaristo Akerele, M.D.

SUMMARY:

Background: K2/Spice and synthetic marijuana are an herbal mixture of dried plant materials and toxic chemicals. K2/Spice and other synthetic cannabinoids (JWH-018, JWH-073, JWH-200, CP 47-497 and CP 47-497C8) were categorized as schedule 1 controlled substances by the U.S. Drug Enforcement Administration (DEA) in 2011. Despite strict regulations, these drugs are freely available on the Internet and local head shops. Very little is known about cannabinoid-induced toxicity and its treatment, creating a challenging situation for health care professionals. The aim of this case series is to report synthetic cannabinoid-induced toxicity causing seizures and bring more awareness among medical professionals regarding synthetic cannabinoid products, clinical presentations and treatment options for their toxic effects. **Methods:** We reviewed five cases of K2-induced seizures. A complete medical, as well as psychiatric, assessment was performed, and appropriate lab investigations were ordered to rule out other potential reasons of seizures. We also reviewed the literature regarding K2/Spice and other synthetic marijuana products on PubMed and Google Scholar for the past ten years. **Results:** Among the five patients included in study, one patient had a history of CVA and seizure disorder. Four patients had no previous history of seizures. They had their first seizure after the consumption of K2.

NO. 159

THE NEED FOR MAINTENANCE ECT IN PREVENTING RELAPSE IN ELDERLY POPULATIONS WITH MAJOR DEPRESSION: A CASE REPORT

Lead Author: Laima Spokas, M.D.
Co-Author(s): Ulfat Shahzadi, M.D., Vandana Doda, M.D., Asghar Hossain, M.D.

SUMMARY:

Objective: To evaluate the role and efficacy of maintenance ECT in reducing relapse in major depression in the elderly population. **Methods:** The literature search was done by searching PubMed for "Efficacy of maintenance ECT in geriatric depression" and "Reducing relapse in elderly depression" for sources published between 2000 and 2015. **Background:** For many years, ECT has been used as a treatment modality for depression. ECT efficacy has also been tested among elderly populations with major depression. Depression among the elderly population is a debilitating illness; if untreated, it can lead to increased mortality, morbidity and death due to suicide. Treatment options are limited in the elderly due to the presence of multiple illnesses and fear of drug interactions. **Case:** This is a case of a 72-year-old female with multiple medical problems and a chronic history of major depression presenting with suicidal ideation with a plan, either by asphyxiation with a bag or jumping off the building. The patient was diagnosed with major depression (recurrent) and was treated with antidepressants and psychotherapy. She had a history of multiple hospitalizations in the past with two suicide attempts. The patient had been on antidepressants and was also treated with six sessions of ECT in the

past with good response. Since then, she lost follow up with her psychiatrist for several years. Although the patient is currently doing well with antidepressants, maintenance of ECT could also be considered to prevent relapse in this patient. **Conclusion:** Although ECT is the most effective, safe, efficient and well-tolerated treatment modality for major depression in the elderly population, the relapse rate is about 50%. Physicians can consider maintenance ECT combined with pharmacotherapy in patients who had been treated with ECT in the past and had good response. Improvement lasting for many weeks to up to four years has been reported with maintenance ECT, but data are still limited about its safety and efficacy. On the basis of available information, maintenance ECT can be an important treatment option to reduce relapse in treatment-resistant elderly depression. Hopefully, an ongoing PRIDE study (prolonging remission in depressed elderly) will shed more light on the efficacy and safety of maintenance ECT for treatment-resistant elderly depression.

NO. 160

THE THERAPEUTIC INTERVENTIONS FOR PEDIATRIC BIPOLAR DISORDER

Lead Author: Laima Spokas, M.D.
Co-Author(s): S. Sibtain, M.D., A. Hossain, M.D.

SUMMARY:

Background: During the past decade, extensive research has been done to understand the neurobiology, phenomenology and potential therapeutic interventions of children and adolescents with bipolar disorder. Age-specific treatment logarithms were proposed to combine both mood stabilizers and antipsychotics to reduce symptoms of childhood onset bipolar disorder. Psychotherapeutic interventions are generally used as an adjunct to psychopharmacological therapy. **Methods:** A case of an adolescent is presented and studied for the management of bipolar disorder in the pediatric age group. Along with this case, PubMed, PMC, the National Institute of Mental Health (NIMH) and various journals related to pediatric bipolar disorders were searched and studied. **Case:** A 15-year-old female previously diagnosed with bipolar disorder was stable for approximately three months. However, the patient's psychiatrist tapered and discontinued quetiapine as per patient and parental request while continuing her on lithium. The patient began to report irritability, agitation, aggression and anxiety versus paranoia, difficulty with social interactions, periods of depression where she felt hopeless and helpless, low self-esteem, fatigue, and difficulty focusing and remembering. Since then, in a short period of time, the patient was tried on lurasidone, iloperidone, risperidone and ziprasidone, with the addition of buspirone. Memantine was also tried. The patient began to have worsening social anxiety and increased paranoia at school. Eventually, the patient presented to ED due to increasing restlessness and racing thoughts after evaluation; medication side effects and toxicity were suspected. The patient was treated and observed and released from the hospital but two days later returned with acute manic symptomatology with psychosis and was admitted for stabilization. **Discussion:** There is no long-term pharmacological intervention available for treatment of bipolar disorder in the pediatric age group, and each case should be taken into account individually. It is to be noted that, in this case, there were multiple factors involved for frequent relapses in the patient, notably family and social issues and confrontation with her mother. Lack of remission and family support could have led to frequent change in psychiatrist and, in turn, frequent change in the pharmacological interventions. **Conclusion:** There are no strict guidelines for pharmacological interventions for bipolar disorders in adolescents, but the user has to be very cautious, taking into consideration the side effects and development of treatment resistance. Psychotherapies along with pharmacotherapies could be used to overcome the frequent relapses and increase the remission period of the disorder. Close monitoring with frequent follow-up to maintain compliance and involve the family for their support is mandatory for successful maintenance therapy in the adolescents.

NO. 161

USE OF THC ANALOGS IN CANNABIS USE DISORDER

Lead Author: Ananya R. Sreepathi, M.D.
Co-Author(s): Mohammed F. Rahman, M.D., Asghar Hossain, M.D.

SUMMARY:

Marijuana has been noted to be the most widely used illicit drug in the world and the United States. Its abuse has surpassed cocaine and heroin as the most common reason for admission in substance abuse treatment. Many studies have examined withdrawal of alcohol, cocaine, opiates and nicotine, but very few studies have focused on cannabis use, leading many to believe that it's an

underappreciated problem. This review summarizes a few different studies that were done between 2008 and 2013 on the efficacy of using dronabinol and nabilone for cannabis addiction. Both of these medications are THC analogs that are primarily used for treatment and prevention of nausea and vomiting caused by cancer medications. These studies included case reports and randomized, double-blind, placebo-controlled studies. In the two articles examining dronabinol, the results were conflicting, though both stated that cannabis withdrawal symptoms showed improvement with dronabinol. The difference was seen in relapse and continued use of cannabis. Either the medication was not strong enough or the desire to discontinue marijuana use was not there. The third article discussed a study of nabilone. This medication has a higher bioavailability and clearer dose linearity as compared to dronabinol. The study was done in an inpatient setting on nontreatment-seeking marijuana smokers. Promising results were seen, as nabilone significantly reversed symptoms of withdrawal, reduced use of marijuana and decreased relapse. This is a significant result because even intoxication levels of dronabinol dosages have not yielded these positive results in lessening usage and relapse. Further research needs to be done on this subject so that we can see if this finding can be repeated on a larger scale. If validated, the results could be seen as an incredible development in the treatment of cannabis addiction.

NO. 162

IMPULSE-CONTROL, CONDUCT DISORDERS AND INTELLECTUAL DISABILITY: A CONCERNING COMBINATION

Lead Author: Ananya R. Sreepathi, M.D.
Co-Author(s): Pankaj Manocha, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Disruptive, impulse-control and conduct disorders have been classified in the *DSM-5* as a combination of disorders that fell under two categories in the *DSM-IV* (disorders of infancy, childhood or adolescence and impulse-control disorders not otherwise specified). These disorders are characterized by problems in emotional and behavioral self-control. Impulsivity, though present in other psychiatric disorders, is characteristic of impulse-control and conduct disorders and is an important risk factor for suicide and homicide. The published literature shows that people with intellectual disabilities are at a significantly higher risk of mental illness. Co-occurring intellectual disability not only presents a diagnostic challenge but also increases the risk of suicide and homicide by multiple folds. **Case:** We present the case of a 46-year-old Caucasian male with a diagnosis of impulse-control disorder with co-occurring intellectual disability. He was brought to our hospital from home by emergency medical services due to aggressive and agitated behavior toward the family. He has been on atypical antipsychotics, antidepressants and anxiolytics. **Objective:** The authors provide an overview of evidence-based treatment in patients with co-occurring impulse-control conduct disorder and intellectual disability by comprehensive assessment of an individual's complete clinical picture. **Conclusion:** A comprehensive assessment plan by the team of skilled professionals that integrates psychological and pharmacological therapies to target a specific problem improves outcomes in such patients.

NO. 163

WITHDRAWN

<ParaStyle:PROG PAPER-SUMMARY>**Background:** As transgender individuals gain more visibility in American society, psychiatrists may encounter more child and adolescent patients openly expressing gender identity issues. Patients who identify as transgender face significant challenges in institutional settings. We report a case of a young transgender female patient on an inpatient psychiatric child unit and explore the obstacles encountered by the treating team in providing equitable care and appropriate disposition. **Case:** Ms. D. is a 12-year-old African-American biologically male child who was admitted to the child inpatient unit due to self-injurious behavior, marijuana use and running away. Ms. D. admitted to feeling depressed and cutting herself when angry. She identified her primary stressor as her family's unwillingness to accept her sexuality and gender identity. She shared that she was attracted to males and identified as female. While her grandmother was supportive, Ms. D. alleged that other family members would visit and berate her for her "choices." DHS was involved, as the patient had made allegations against family members and run away from multiple foster homes. Her biological father remained involved and visited Ms. D. weekly; however, her father's wishes were in conflict with the patient's request for feminine dress, female pronoun and name, and initiation of hormone

therapy. The treatment team and DHS agreed that Ms. D. required institutional level of placement for safety; however, no facility has accepted the patient. **Discussion:** Transgender patients face an initial obstacle as soon as they enter the unit-room assignment. Ms. D. was given a private room despite her preference for a roommate. She also had a private bathroom, which worked well while she was on the unit, but off unit, there was no clear policy for which facility she should use. The team also had the challenge of protecting Ms. D.'s privacy when other children inquired about her gender. During visiting hours, families of admitted children also had concerns and questions about Ms. D. The treatment team also faced challenges with staff members who openly objected to interacting with the patient, citing religious or cultural beliefs. The patient reported feeling pressure to change her gender identity. She "tried to be male to make other people happy" but this made her feel depressed and suicidal. She felt hurt as many facilities interviewed her but denied acceptance as they "could not meet her needs." **Conclusion:** Institutional settings such as prisons, colleges, professional sports leagues and the military have begun to develop policies to treat transgender individuals with fairness and respect. Psychiatric facilities, including long-term placement institutions, have a similar responsibility to provide patients with appropriate options to meet their health care needs. As transgender individuals become more visible in society, providers should be prepared to meet these challenges.

NO. 164

EROTOMANIA AND THE FRONTAL LOBE: A CASE REPORT OF DELUSIONAL DISORDER ARISING FROM A CNS NEOPLASM

Lead Author: John Stupinski, B.A.
Co-Author(s): Jihye Kim, M.D., Dimitry Francois, M.D.

SUMMARY:

Erotomania is a rare subtype of delusional disorder, a set of diagnoses characterizing fixed, false beliefs involving oneself or one's surroundings. While secondary delusional disorders have been attributed to diverse etiologies, erotomania arising from a frontal lobe CNS neoplasm has not been previously described. In this case report, we describe a case of delusional disorder, erotomanic and persecutory subtype that arises status posttreatment of a frontal lobe oligoastrocytoma with associated psychiatric and neurocognitive symptoms due to loss of frontal lobe circuit functionality.

NO. 165

MENSTRUAL PSYCHOSIS: A CASE OF ESTROGEN WITHDRAWAL PSYCHOSIS

Lead Author: Leah Susser, M.D.
Co-Author(s): Alison D. Hermann, M.D.

SUMMARY:

Background: There has been a postulated relationship between mood symptoms in bipolar disorder and reproductive hormones for years. However, the details of this relationship remain unclear, and it is an area of active scientific investigation. Menstrual psychosis is a term used by Brockington to describe hormonally mediated psychotic symptoms related to the menstrual cycle, often manifested in women with bipolar disorder. We present a case of menstrual psychosis and explore the relationship between bipolar symptoms and reproductive hormones. **Case:** Ms. A. is a 24-year-old woman with bipolar I disorder with psychotic features who experienced depression, anxiety, disorientation, visual changes, suicidality and dissociative symptoms in the late luteal and early follicular phases of her menstrual cycle. After menstruation, she briefly experienced hypomania, followed by an asymptomatic period. These cyclical symptoms resolved with treatment of her bipolar disorder. **Discussion:** Ms. A.'s symptoms are consistent with menstrual psychosis in that they resemble the mental status in postpartum psychosis, occur during periods of estrogen withdrawal and are comorbid with bipolar disorder. Deuchar and Brockington (1998) hypothesize that menstrual psychosis and postpartum psychosis are similar in etiology and that both are related to estrogen levels. There is evidence that estrogen is an antipsychotic, which would explain these findings mechanistically. The treatment of menstrual cycle-related exacerbations of bipolar disorder is not well-studied. Ms. A.'s symptoms are controlled by treating the underlying disorder. **Conclusion:** Ms. A.'s case demonstrates that, in women with bipolar disorder, low estrogen states may be associated with a vulnerability to psychosis, and high estrogen states may be associated with a vulnerability to hypomania. Effectively stabilizing her mood with a combination of lithium, valproate and lurasidone was successful in mitigating her sensitivity to changing estrogen states. Further inquiry is warranted to better understand the mechanisms by which estrogen may affect mood and psychotic

symptoms in women with bipolar disorder.

NO. 166

ELECTROCONVULSIVE THERAPY IN THE TREATMENT OF DELIRIOUS CATATONIC MANIA: A CASE PRESENTATION

Lead Author: Cuneyt Tegin, M.D.
Co-Author(s): Mitesh Patel, George V. Kalayil

SUMMARY:

Background: Bipolar disorder is one of the most common mental illnesses, and these patients mostly present with manic symptoms. Mania with delirium is an acute syndrome of excitement, delirium and psychosis. Although delirious mania is underdiagnosed, 15% to 20% of patients with acute mania show signs of delirium. Mania has also been associated with catatonia, and catatonic mania has poorer outcomes. Catatonic symptoms can be seen in delirious mania and may be linked with neuroleptic malignant syndrome (NMS) due to common pathophysiology of central dopamine deficiency. Here, we present a case of a patient with bipolar disorder who presented with a mania associated with delirium and catatonia. **Case:** Mr. J.M., a 54-year-old male who has a past psychiatric history of bipolar disorder, presented to the University of Louisville Emergency Psychiatry Service (ULEPS) on a mental inquest warrant (MIW) taken out by his wife. Per MIW, the patient has threatened to beat his wife and locked her in their bedroom. He was uncooperative with police and had to be tased. The patient was disheveled, extremely agitated, hostile and uncooperative at ULEPS and was admitted to psychiatric services for safety and stabilization. The patient has had multiple previous psychiatric admissions. The first episode started in his mid-20s and has been controlled on multiple medications: valproic acid, lithium, risperidone, olanzapine and trazodone. The patient was on aripiprazole 20mg/day and trazodone 150mg/day as needed and presented with insomnia on admission. Valproic acid was recently stopped due to hyponatremia. On the third day of admission, the patient started to demonstrate abnormal movements that met criteria for catatonia. The patient was moving his head back and forth, waving his right arm as if casting a fishing line, grimacing and not responding the questions. When we tried to stop him, he resisted us. The patient was consulted to neurology and medicine to rule out organic reasons. We diagnosed the patient with delirious mania with catatonia. Catatonia improved with lorazepam as needed, but the patient developed two more episodes the next day. We stopped all medications except lorazepam as needed and decided to try electroconvulsive therapy (ECT). The patient received a series of six sessions of bilateral ECT in 16 days. After the ECT, catatonia, mania or delirium-like symptoms resolved, but the patient had some fluctuating confusion during the day, and these symptoms also significantly improved in a week. The patient is stabilized with lamotrigine and quetiapine. **Discussion:** Delirious mania patients may have catatonic features that increase with disease progression. To our knowledge, only a few delirious catatonic mania cases have been published in the literature. ECT is described as an effective treatment for these cases and was also effective for our patient.

NO. 167

K2-INDUCED PSYCHOSIS: RECURRENT RELAPSE AND TREATMENT CHALLENGES

Lead Author: Swaminathan Thangaraj, D.O.
Co-Author(s): Mario Mangiardi, M.D., Thambipillai Sureshkumar, M.D., Wei Du, M.D.

SUMMARY:

Synthetic cannabinoids (SC) such as “K2" or “spice” have become an epidemic problem. SC binds to cannabinoid receptors (CB1 and CB2). These receptors are found in various brain regions implicated in neuropsychiatric disorders, including the cerebral cortex, basal ganglia, hippocampus, anterior cingulate cortex and cerebellum. Typical acute neurological effects of SC include euphoria, drowsiness, agitation, paranoia, delusion, hallucinations and mania. SC may also affect cognitive functions and was found to cause exacerbation of underlying psychiatric symptoms. We describe a 29-year-old African-American male who was admitted 11 times to an acute inpatient unit from August 2013 to September 2015. Lengths of stay varied from 1 to 37 days. Presenting symptoms usually included bizarre behavior, paranoia, mania and disorganization. Most importantly, he self-reported K2 use immediately prior to every admission. During his inpatient stays, the patient has received a number of medication trials: divalproex sodium, chlorpromazine, haloperidol, haloperidol decanoate, olanzapine, risperidone, paliperidone palmitate and aripiprazole. Divalproex sodium was given throughout every hospital course. Most medications or combinations of medications were effective in resolving acute

psychotic symptoms but failed to prevent frequent relapses or readmissions, except haloperidol decanoate, which may be favorable in decreasing relapse or readmission. For example, the patient was able to maintain uninterrupted outpatient treatment for 396 days after haloperidol decanoate treatment (100mg IM every four weeks). In contrast, his uninterrupted outpatient treatment ranged from 1 to 37 days while on primarily second-generation antipsychotics. Current findings suggest that first-generation antipsychotics, long-acting injectables in particular, may offer a sustained effect in reducing readmissions associated with K2-induced psychosis. Further investigation may be warranted to understand the precise mechanism of such effects of first-generation antipsychotics.

NO. 168

SEROTONIN SYNDROME IN THE BURN ICU

Lead Author: Taylor Tobkes, M.D.
Co-Author(s): Rana El-Maghraby, M.S..

SUMMARY:

Background: Diagnosing and treating serotonin syndrome continues to challenge clinicians in many patient care settings. This is in large part due to the diverse array of mechanisms that can trigger a serotonergic surge in the central and peripheral nervous systems. Here we present a unique case of a patient with depression previously well controlled on escitalopram whose ethnicity and acute medical condition put him at an increased risk of developing serotonin syndrome. **Case:** Mr. L. is a 32-year-old Chinese man with a history of depression well controlled with escitalopram 10mg, who was admitted for treatment of partial-thickness burns covering half of his total body surface area. The patient was in a significant amount of pain, which was controlled with fentanyl 250mcg IV during wound care as well as hydromorphone 6mg as needed. CL psychiatry was consulted on day 10 in response to the patient endorsing intrusive memories of the fire, recurrent nightmares, hyperarousal and significant sleep disturbance. Given these symptoms, the patient was diagnosed with acute stress disorder. His primary team was not aware of his psychiatric history, and thus, his home psychiatric medications had not yet been started. He was restarted on home dose escitalopram 10mg as well as olanzapine 5mg at bedtime and 2.5mg q8h as needed for anxiety and/or agitation. On day 14, four days after starting psychotropic medication, the patient was found to have hypoactive delirium and was hyperthermic to 38.5Â°C. His physical exam was remarkable for myoclonic jerks in his upper and lower extremities, fine resting tremor in his upper extremities and intermittent dyskinetic movements of the lips and tongue. **Discussion:** There was a high suspicion for serotonin syndrome in the setting of restarting escitalopram, and therefore, all serotonergic agents (escitalopram, fentanyl, olanzapine) were stopped with full resolution of symptoms within 24 hours. The etiology of Mr. Li's serotonergic surge was likely multifactorial in nature. The patient was started on a serotonergic agent (escitalopram) while concurrently receiving moderately high doses of a serotonergic opioid (fentanyl) as well as an antipsychotic agent (olanzapine), which can enhance the serotonergic effect of serotonin modulators. Moreover, burn patients have been shown to have higher levels of serotonin in both healthy and burned tissue than in controls, which may exacerbate symptoms related to peripherally acting serotonin. Finally, it is possible that such metabolism was further impaired due to "slow metabolism" polymorphisms in the CYP2D6 enzyme, which are commonly seen in the Chinese population. It is likely that this confluence of factors triggered a dangerous response in a patient who had previously tolerated escitalopram. As such, physicians should not overlook serotonin syndrome as a diagnosis if a patient has previously tolerated a direct serotonergic agent like an SSRI.

NO. 169

METABOLIC SIDE EFFECTS OF THE RISE: THE USE OF METFORMIN TO COUNTERACT CLOZAPINE-INDUCED ADVERSE REACTIONS—A CASE REPORT

Lead Author: Celia Varghese, M.D.
Co-Author(s): Donald Kushon, M.D., Munjerina A. Munmun, M.D., Joanna Beyer, D.O., Yiqing Miao, M.S., Rachel Hess, M.S..

SUMMARY:

Background: Clozapine has been the most effective medication for treatment-resistant schizophrenia. However, with this exceptional medication also come inimical side effects. In the past decade, there has been growing concern among psychiatrists that the use of clozapine may be related to adverse metabolic effects. For example, in phase 3 of the CATIE schizophrenia trial, those who took prolonged periods of clozapine reported weight gain and an upsurge in the blood levels of glucose, triglycerides and glycosylated hemoglobin. We will discuss a case report of a patient taking metformin whose

metabolic parameters were stabilized so the patient could be maintained on clozapine. OBJECTIVES: To determine the effectiveness of metformin in negating adverse metabolic side effects. **Case:** A 23-year-old African-American female presented with acute psychosis as manifested by disorganized behavior and thought, increased auditory hallucinations, lack of self-care and agitation. She was prescribed chlorpromazine 50mg TID, divalproex sodium 1,250mg q12 hours, haloperidol 20mg BID and benztropine 2mg q12 hours. However, she continued to have disorganized thoughts, auditory hallucinations, episodes of agitation and aggression. The decision was made to give her clozapine. She was started on metformin 500mg BID with meals. Her initial weight was 77.1kg (171lbs), BMI 29, Glucose 84mg/dl and triglyceride 90mg/dl. Clozapine was slowly titrated upward. She gained 1.3kg three weeks after starting clozapine. However, her metabolic panel was WNL. Her HbA1c was 5.2%, glucose 80mg/dl and triglyceride 52mg/dl. Metformin was increased to 850mg BID with meals after three weeks. During the latter three weeks, the metformin was increased to 1,000mg BID with meals to maximize stabilization. At the end of six weeks, her weight was 79.2kg (174lbs), BMI 32 and glucose 93mg/dl. Clozapine was 150mg q12 hours at the end of six weeks. Her psychotic symptoms decreased. She became more logical, had decreased auditory hallucinations and decreased agitation. **Discussion:** During the initial three-week period, she demonstrated slight weight gain. Metformin was increased to correct the effects of the medication's side effects. Her weight continued to increase a minimal rate at the end of six weeks. In a total of six weeks, the patient gained three pounds. Moreover, her glucose, triglyceride and HbA1c continued to be WNL during the six-week period, stabilizing her metabolic effect. **Conclusion:** One of the challenges faced by clinicians today is dealing with adverse side effects from long-term antipsychotic medications. Sustaining a healthy metabolic control becomes difficult, especially on an inpatient psychiatry unit when patients have sedentary lifestyles and poor diet. Due to this growing concern, more studies are needed to establish metformin as an evidence-based intervention needed to fight medical complications from long-term antipsychotic side effects.

NO. 170

12-YEAR-OLD WITH LANDAU-KLEFFNER SYNDROME AND NONEPILEPTIC SEIZURES: A COMPLEX CASE PRESENTATION WITH LITERATURE REVIEW

Lead Author: Divya Vemuri, M.D.
Co-Author(s): Jennifer Vinch, M.D.

SUMMARY:

Background: Landau-Kleffner syndrome (LKS) is one classification within the broader group of childhood-onset encephalopathies caused by electrical status epilepticus during sleep (ESES). LKS is a form of acquired aphasia, typically presenting with normal development for several years followed by deterioration of language function. Within the category of ESES, executive functioning skills also decline. Treatment options include using antiepileptic agents and surgical options. However, even with aggressive treatment, some patients continue to have seizures and ongoing language deficits, resulting in impairment of functioning. **Case:** A 12-year-old female presented to the outpatient clinic with a history of Landau-Kleffner syndrome, variably diagnosed as ESES previously, and psychogenic nonepileptic seizures precipitated by intense anxiety and fear of having seizures as well as an inability to express herself. She was referred by her neurologist for management of anxiety, as she was having as many as seven nonepileptic seizure episodes per day, precluding her from attending school and significantly interfering with daily functioning. Anxiety had occurred for years in various settings, including home, school and other public places. Her triggers included being in large crowds, noisy places, and being given certain homework. Her symptoms began prior to the onset of seizures at the age of seven but drastically increased after the onset of her seizure disorder, worsening as her ability to use language decreased. In terms of pharmacological treatment, she had been tried on fluoxetine in the past, but it increased her seizure activity and was consequently discontinued. SSRIs have the potential to lower the seizure threshold. Therapeutically, she had been participating in therapy but was not succeeding due to her loss of language skills. A literature search was conducted to examine treatment options least likely to lower the seizure threshold. She was recently started on escitalopram and has had some improvement in anxiety. Therapy has been targeted at improvement of communication skills and expression of internal states, with some gains. The frequency of nonepileptic seizures has decreased dramatically. **Discussion:** Syndromes with electrical status epilepticus during sleep (ESES) include Landau-Kleffner syndromes. Patients with Landau-Kleffner syndrome may continue to have seizures

despite being on antiepiletic medications. This leads to significant impairment of functioning. Management of conditions such as mood and anxiety disorders in these patients also requires special consideration of the unique challenges of doing therapy and prescribing medication.

NO. 171

RAGE AGAINST SELF AND OBJECT: A CASE REPORT OF TREATMENT-RESISTANT SCHIZOPHRENIA WITH LITERATURE REVIEW

Lead Author: Chittranjan B. Verma, M.D.
Co-Author(s): Stan P. Ardoin, M.D.

SUMMARY:

This is the case of a 30-year-old Caucasian male with a long history on the inpatient unit of schizophrenia manifesting in outbursts against the water fountain who broke the door frame from the wall. Sometimes, he directs this rage against himself, not showering for months. He has delusions that his parents have been replaced by strangers. He has been given robust trials of antipsychotic medications, including clozapine, haloperidol decanoate, aripiprazole depot, paliperidone depot, chlorpromazine, etc., without much symptom control. He presents a challenge on the inpatient unit and a challenge for placement in the community. We will review the literature for treatment-resistant cases of schizophrenia and therapeutic challenges that this condition may present.

NO. 172

MICROVASCULAR CNS LESIONS, HYPOMANIA, SEIZURE ACTIVITY AND PSEUDOBULBAR AFFECT IN THE ELDERLY: A CASE REPORT

Lead Author: Ankita Vora, M.D., M.P.H.
Co-Author(s): Farhoud Faraji, M.S., William M. Redden, M.D., George T. Grossberg, M.D.

SUMMARY:

Case: A 65-year-old Caucasian female with history of anxiety, bipolar disorder and breast cancer in remission for six years presented with babbling, head deviated to the right, arms flexed in tonic-clonic posture and sialorrhea. The episode lasted approximately 60 – 120 seconds, during which she was unresponsive to external stimuli. A six-month history of change in behavior and memory was reported. This included episodes of confusion, labile affect and uncharacteristically impulsive behavior, resulting in loss of employment and legal action against her. On exam, she displayed intermittent episodes of confusion and emotional lability, rapidly alternating from pleasant and hypomanic to tearful affect four to five times in a 20-minute interval and despondent with no apparent external triggers. Medications included venlafaxine 150mg daily for depression and alprazolam 0.25mg prn for anxiety. Infectious and reversible causes were ruled out with cerebrospinal fluid and serum laboratory tests. Urine drug screen tested positive for cannabinoids. A brain MRI three months prior identified a nonenhancing hyperintensity (4mm) in the subcortical white matter of the left frontal lobe that was consistent with small vessel ischemia. In addition, three other nonenhancing hyperintensities were detected in the deep white matter of the mid pons, right frontal lobe and left posterior frontal lobe. On admission, MRI showed scattered punctate periventricular and subcortical white matter hyperintensities. FDG-PET study of brain showed normal physiologic FDG distribution with no detectable areas of hypometabolism. Electroencephalography (EEG) performed 24 hours after admission showed slow background activity, indicating bilateral cerebral hemispheric dysfunction consistent with a mild encephalopathy and one right frontal onset clinical seizure during photic stimulation. EEG was repeated without photic stimulation 48 hours after admission and showed initial mild encephalopathy that rapidly improved to normal wave forms with no interictal or ictal epileptiform activity. A third EEG two hours later showed normal activity. She scored 25 out of 30 on the Saint Louis University Mental Status (SLUMS) questionnaire. The Center for Neurologic Study Lability Scale (CNS-LS) was completed with help from her son, as she continued to be confused and emotionally labile, frequently breaking into bouts of unprovoked crying. CNS-LS score was 19. Valproate 500mg BID was started, which showed improvement in her hypomanic symptoms but little to no improvement in pseudobulbar affect (PBA) at her two-week outpatient follow up. **Discussion:** It is important for physicians to consider pseudobulbar affect as an accompaniment to seizure activity in older adults that at times could be triggered by microvascular lesions of the CNS. Valproate helped suppress hypomanic symptoms and seizures, but consideration should be given to dextromethorphan/quinidine if there is worsening of the PBA component.

NO. 173

WITHDRAWN

NO. 174

UNDOCUMENTED IMMIGRANTS IN PSYCHIATRIC WARDS: A CASE REPORT AND CONCISE REVIEW

Lead Author: Mike Wei, B.S.
Co-Author(s): Katherine Lubarsky, Bernadine Han, Janna Gordon-Elliott, Jonathan Avery

SUMMARY:

The United States has become home to increasing numbers of undocumented immigrants, particularly those from Latin America. While Latino immigrants are relatively healthy upon arrival, they are paradoxically more likely to have poor health and low socioeconomic status after arrival. This decline can be attributed to lack of documentation, difficulty accessing health care, language and cultural barriers, poverty, discrimination, and exploitation by employers. Overall, the US health care system spends roughly $2 billion a year caring for undocumented immigrants. Three guiding laws govern care for undocumented immigrants: the Emergency Medical Treatment and Active Labor Act (EMTALA), Medicaid and Medicare Conditions of Participation. However, these laws not only provide grossly inadequate compensation for hospitals, but no laws exist governing discharge planning or compensation for long-term care following discharge. Laws governing repatriation are sorely needed: without them, patients are vulnerable to abuse and unethical conduct. We present the case of a Honduran undocumented immigrant presenting to the ED following acute psychosis. Following his stated desire to return, we assisted him with repatriation to Honduras. Given the dearth of publications regarding the intersection of undocumented immigrants in the U.S. with the psychiatric world, we provide a concise review of care of undocumented immigrants.

NO. 175

DEPERSONALIZATION/DEREALIZATION: NEUROBIOLOGY, PSYCHODYNAMICS AND A CASE IN SCHIZOPHRENIA

Lead Author: Bryce Wininger, M.D.
Co-Author(s): Mayada Akil, M.D., Kurt Ela, Psy.D.

SUMMARY:

Background: Depersonalization (DP) is the dissociative phenomenon involving a subjective sense of detachment from the self or of being an outside observer of oneself. Derealization (DR) involves the sense that the external world is "unreal." Both these phenomena occur in a number of neurological and psychiatric disorders and in response to some medications and substances. Examples include temporal lobe epilepsy, traumatic brain injury, borderline personality disorder, dissociative identity disorder, the use of ketamine, etc. Less well-described is the occurrence of these phenomena in schizophrenia, as illustrated in the following case. **Case:** B.R. is a 31-year-old man who has been seen in the psychopharmacology clinic at MedStar Georgetown University Hospital Department of Psychiatry for nearly ten years. He originally presented with auditory hallucinations, paranoid delusions, and thought disorganization; he also endorsed depressive, obsessive-compulsive, and anxiety symptoms. Additionally, he described depersonalization and derealization experiences that began around the same time as his psychotic symptoms. These are characterized as suddenly feeling as if he and the entire world are "unreal," causing a significant level of distress. This is described as a truly sensory experience, not just a delusional interpretation of his surroundings. B.R. has been medication-compliant, lives a stable life at home with his parents, and has managed to complete an undergraduate degree at a prestigious university over a period of eight years. He is on a complex psychopharmacological regimen including clozapine and an antidepressant. His psychotic and mood symptoms have improved, but his dissociative symptoms remain problematic and distressing. These symptoms emerge sometimes as a consequence of introspection and when in crowded places. He does not experience these phenomena when immersed in physical or cognitive activities at home (housework, computer work, etc.). B.R. is also engaged in regular psychotherapy that includes reality testing, supportive therapy, and behavioral interventions. **Objective:** Depersonalization and derealization are important neuropsychiatric phenomena that occur across a wide range of disorders, but have rarely been reported in schizophrenia. This poster will have three aims: 1) To illustrate the clinical challenges posed by DP/DR in a case of schizophrenia, particularly in determining the appropriate psychopharmacological and psychotherapeutic treatments; 2) To review the literature on the neurobiology of DP/DR; and 3) To discuss the psychodynamic characterization of DP/DR, particularly in the context of a psychotic illness.

NO. 176

THE IMPACT OF MEDICATION ON TEETH PULLING AND SKIN PICKING

Lead Author: Mohammad Yousuf, M.D.
Co-Author(s): Adam Balkozar, M.D.

SUMMARY:

Objective: To examine the relationship between worsening of compulsive teeth pulling and excoriation (skin picking) with use of Vyvanse. **Case:** The patient is a nine-year-old Caucasian male with no prior hospitalization. He had a habit of wiggling his teeth and skin picking; symptoms started when he was in kindergarten. It got worse in March 2014, when he pulled out his first teeth. In the last one year, he pulled out five permanent teeth and two baby teeth. The last two incidences happened in school. Children division got involved and referred him for psychiatric evaluation The patient was diagnosed with GAD, OCD and ADHD. He had been taking fluoxetine (SSRI) 5mg daily and Vyvanse 50mg daily for the last one year, prescribed by his pediatrician. The adoptive mom noticed significant improvement in his ADHD symptom, but his anxiety and OCD symptoms have gotten worse. Clinical course: After the psychiatric evaluation, we decided to discontinue Vyvanse with slow titration. Initially, we decreased the dose of Vyvanse to 40mg daily, and we started clonidine 0.05mg bid and also increased the dose of fluoxetine (SSRI) to 10mg daily. On the next visit, the adoptive mother reported improvement in symptoms. We continued his treatment plan, finally able to discontinue his Vyvanse and increase the dose of fluoxetine (SSRI) to 20mg daily. The patient tolerated the transition with no adverse effect. His adoptive mom noticed complete remission of symptoms, including no teeth pulling or skin picking behavior, since discontinuing Vyvanse. **Conclusion:** This case highlights a few important points for discussion. The patient's teeth pulling could be a manifestation of OCD symptoms or could be due to stereotypies, which are also very common in children. Vyvanse is FDA approved for ADHD. Although his adoptive mother noticed significant improvement in ADHD symptoms, his compulsive teeth pulling and excoriation (skin picking) got worse. Based on this case report, we can suggest that Vyvanse was most likely the causative agent for his worsening OCD symptoms. His symptoms resolved after discontinuing Vyvanse. Although we simultaneously increased the dose of fluoxetine (SSRI) to 20mg daily with slow titration and started clonidine, the improvement in symptom was observed even before we increased the dose of fluoxetine (SSRI) to 20mg daily. Considerably more work in this area will be needed before this relationship can be fully understood and treated with maximum efficacy. There is a great need for research to determine how patients with ADHD and comorbid conditions of teeth pulling and skin picking can be diagnosed and what effective treatment and strategies can best meet their needs.

NO. 177

PREDICTION CHALLENGES OF READMISSION IN THE PSYCHIATRIC INPATIENT SETTING: A RESIDENT-RUN PERFORMANCE IMPROVEMENT INITIATIVE

Lead Author: Muhammad Zeshan, M.D.
Co-Author(s): Katya Frischer, M.D., Panagiota Korenis, M.D., Wen Gu, Ph.D., Sasidhar Gunturu, M.D., Lakshmi Priya Munnangi, M.D., Maria Reynoso, M.D., Raminder Cheema, M.D., Amina Hanif, M.D., Aos Mohammed Ameen, M.D.

SUMMARY:

Hospital 30-day readmission rates have become a growing concern in health care. According to the Center for Medicare and Medicaid Services (CMS), hospital readmissions potentially cost Medicare more than $26 billion annually, and an estimated $17 billion of that expenditure is due to readmissions that could have been avoided. The data show that one of the top five causes of readmission is mental and/or substance use disorders, which accounts for about one in every seven Medicaid readmissions. A closer look at the data reveals important concerns about the factors driving readmission. While there are no definitive predictors of readmission, specific clinical factors have been identified to assess a patient's risk of readmission. Historically, the LACE score (length of stay, acuity of admission, comorbidities and emergency department visits in the previous six months) has been utilized as a tool to assess a patient's likelihood of readmission. The expected probability of a 30-day readmission for each point ranges from 2% for a LACE score of 0 to 43.7% for a LACE score of 19. LACE is a tool established within medical/surgical settings, and there is no data indicating that the LACE score reflects an accurate risk of readmission if applied in an acute psychiatric setting. Recent evidence suggests that the READMIT score (repeat admissions, emergent admissions (i.e., harm to self/others), diagnosis (psychosis, bipolar and/or personality disorder), unplanned discharge, medical comorbidity, prior service use intensity and time in hospital) correlates better to the risks of

readmission in a psychiatric population. Bronx Lebanon Hospital Center is a private, nonprofit, urban hospital situated in a poor, mostly African-American and Hispanic neighborhood in the South Bronx. Bronx Lebanon hospital uses the LACE tool to identify patients at risk for readmission. No studies exist directly comparing the predictive value of the LACE tool to the READMIT tool. We conducted a performance improvement project to identify which tool better predicts readmission to an inpatient psychiatric unit. We identified 65 patients admitted to our acute psychiatric inpatient service in 2015 who have been subsequently readmitted. We compared them with a group of 65 patients who were not readmitted during the same time period. We compared the LACE score and the READMIT score for all patients to identify which tool is a more accurate predictor of readmission for our patients. We believe this information will help clinicians target patients more accurately in order to decrease psychiatric readmission rates.

MEDICAL STUDENT-RESIDENT COMPETITION POSTER 2

NO. 1

DISSEMINATION AND IMPLEMENTATION OF CBT FOR DEPRESSION: EXAMINING ATTITUDES, THERAPY PATTERNS AND LEVEL OF COMPETENCY AMONG THIRD-YEAR CLINIC RESIDENTS

Lead Author: Earl Andrew B. De Guzman, M.D.
Co-Author(s): Martha Zimmermann, B.A., Kate Wolitzky-Taylor, Ph.D., Isabel Lagomasino, M.D., M.S.H.S.

SUMMARY:
Background: A World Health Organization (WHO) study found that 40% of disability worldwide is due to depression, having worse impacts on daily functioning compared to nonpsychiatric illnesses (e.g., asthma, diabetes, arthritis, angina), with another study predicting depression to be the leading cause of disability in high-income countries by 2030. Cognitive Behavioral Therapy (CBT) is an empirically supported treatment (EST) for first-line treatment of major depressive disorder (MDD). Despite numerous studies pointing to the efficacy and effectiveness of CBT, there are several barriers to implementation of CBT: therapist/patient attitudes, public mental health policy, time and setting factors, among others. These barriers are especially salient in delivering cost-effective, evidence-based care to those facing psychosocial challenges. **Objective:** To examine treatment and referral patterns for CBT in the clinic to document the low implementation of CBT and referral to CBT for unipolar depression and to explore barriers to disseminating and implementing CBT. This will allow us to see if more directive dissemination and implementation efforts are needed beyond the requirements of the 3rd year outpatient curriculum in order to increase adoption and use of CBT in the clinic or if the current training model is sufficient for change. **Methods:** Retrospective, systematic chart review of the EMR of selected patients with unipolar depression. Therapy patterns of CBT utilization: offer and delivery by residents as part of one's supervised caseload, referral to an in-house master's level social worker and outside referral to a clinic that provides CBT. Utilization was determined through documented offer, discussion, delivery or treatment progression/goals related only to CBT. Residents completed a battery of questionnaires towards the end of the academic year after having completed requirements for their weekly supervised CBT control cases, didactics and formulation. **Results:** The majority of patients (nearly 90%) received psychotropics. Supportive psychotherapy was the predominant delivery of psychosocial treatment. CBT was delivered to 11% of patients with depression, with Socratic questioning, behavioral activation and feedback as the main forms of CBT intervention. The highest cited barrier to CBT implementation was residents' perceptions that patients would not be receptive; others include lack of time, discomfort and lack of reward with its use (despite strong pride); Axis II and IV comorbidities; and a patient's low cognitive ability. **Conclusion:** There is a lack of dissemination and implementation of CBT for depression among community mental health clinics. This highlights the need for residents to be trained in transdiagnostic, flexible approaches to delivering CBT. Specific CBT modules on how to account for these barriers more efficiently and direct marketing to patients may potentially widen access to ESTs among the underserved.

NO. 2

PREVALENCE OF METABOLIC SYNDROME IN A POPULATION BEING SERVED BY AN ASSERTIVE COMMUNITY TREATMENT TEAM

Lead Author: Jonathan Fairbairn, M.D.
Co-Author(s): Tariq Munshi, M.D., Farooq Naeem, M.D., Jane Baldock, M.D., Martin Feakins, M.D.

SUMMARY:

Background: Metabolic syndrome (MetS) is defined by the co-occurrence of risk factors for both cardiovascular disease and type 2 diabetes. These include high blood pressure, high cholesterol, high blood sugar and abdominal obesity. This condition is associated with significant morbidity and mortality from cardiovascular events and from all-cause mortality. MetS occurs at a higher rate in patients with serious mental illness compared to the general population. OBJECTIVES: 1) Discuss the role of routine monitoring for metabolic syndrome in patients with severe and persistent mental illness; 2) Review the importance of considering a patient's individual risk for metabolic syndrome when prescribing pharmacotherapy; 3) Discuss the role of lifestyle modification in optimizing risk factors for MetS. **Methods:** A chart review was performed on patients served by the Frontenac Assertive Community Treatment Team (ACTT) in Kingston, Ontario, Canada (n=71). Measurements including blood pressure, body mass index (BMI), waist circumference, fasting cholesterol and fasting blood sugar levels were extracted. Additional information including patient demographics, psychiatric diagnosis and prescription medications were collected and analyzed. Descriptive statistics were performed to determine the prevalence of MetS within this population. **Results:** The prevalence of MetS amongst patients served by the Frontenac ACTT was calculated at 31% (n=22). Amongst patients with MetS, 41% (n=9) were prescribed olanzapine, clozapine or both medications. Amongst the ACTT patients, 14% (n=10) were prescribed a metabolically neutral antipsychotic. There was an association between prevalence of MetS and increasing patient age. **Conclusion:** MetS is important to identify because it is associated with an increased risk of serious health conditions such as heart disease and stroke. Identifying MetS is important in order to implement strategies to manage modifiable risk factors and optimize pharmacotherapy.

NO. 3

INTEGRATING AND REDESIGNING MENTAL HEALTH AT PRIMARY CARE LEVEL: TRIPLEAIM UNIVERSAL MPSYCHIATRY (TRIUMPH) MODEL

Lead Author: Abhishek Rai, M.D.
Co-Author(s): Sushant Dahiya, M.B.B.S.

SUMMARY:

Objective: 1) Understand the gap in mental health services at the primary care level leading to a huge burden in terms of loss of lives, DALY, economic loss and extra burden on the health care system; 2) Achieve Triple Aim: integrating patient empowerment; 3) Understand the concept of m-psychiatry and the proposed structure of the TRUMP model; 4) Plan the way forward: testing, validation and implementation road map of the TRUMP model. **Background:** National Institute of Mental Health (NIMH) statistics show that nearly 61.5 million Americans experience mental illness in a given year, and about 13.6 million are living with a serious mental illness. As per NIMH statistics, serious mental illness costs America $193.2 billion in lost earnings per year. The WHO and WONCA (World Health Organization and World Organization of Family Doctors) global report on "integrating mental health into primary care" highlighted that only a minority of psychiatric patients receive basic treatment, and the most viable way of closing the gap is to integrate mental health services into primary care. Our aim is to share the Triple Aim Universal M-Psychiatry (TRUMP) model, a mitigation strategy for Integrating and redesigning mental health at the primary care level. The TRUMP model aims to achieve the Triple Aim (better population health, enhanced patient experience and reduced cost of care) by enabling and training the primary care center and its staff with mental health triage and an effective, validated follow-up and referral system. The system would target both the primary undiagnosed/diagnosed mental disorder patient population as well as high-risk groups like HIV/AIDS, oncology and other comorbid chronic illnesses. The TRUMP model also aims to empower the patient with a well-stitched network with the patient at the center in order to educate and empower not just the patient but also his or her support system (PCP, allied health care professionals, family, friends and psychiatrist). The heart of the program lies in empowering and optimizing time available, with both the patient and the physician using existing systems and integrating it with m-psychiatry. Currently, more than 65% of Americans use smartphones, and everyone is connected with the Internet via different devices, but in the clinical world, technology is still highly underutilized. M-psychiatry would serve as a foundation for the TRUMP model. It is a mobile/web application through which individuals can 1) access, manage and share their health information, 2) educate themselves, 3) access and manage the health information of others (for whom they are authorized) and 4) connect with their primary care circle in a private, secure and confidential

environment. This poster will be a platform to share and discuss the proposed TRUMP model and the best way to move forward with its testing, validation and implementation on a mass scale to help achieve the U.S. government mental health targets of Healthy People 2020.

NO. 4

PROGRAM DEVELOPMENT OF A BUPRENORPHINE/NALOXONE (BUP/NX) OUTPATIENT PROGRAM IN A SAFETY NET HOSPITAL

Lead Author: William Levitt, M.D.
Co-Author(s): Joseph J. Berman, M.B.A., Jeffrey A. Berman, M.D., Therese Grayner, M.S.

SUMMARY:
The opioid use disorder (OUD) epidemic continues to escalate. Bup/Nx maintenance treatment was introduced in 2003 with passage of DATA 2000, meant to increase access to treatment. However, Bup/Nx outpatient treatment (OTP) is resisted by most community and public mental health providers. Bergen Regional Medical Center is a 323+ bed behavioral health (BH) and substance use disorder (SUD) "safety net" hospital for Bergen County and the State of New Jersey. **Objective:** We describe the process of designing and implementing a Bup/Nx OTP to treat an underserved/"safety net" population. **Methods:** We employed need-reflected epidemiology and recurrent media reports of opioid-related deaths, particularly among individuals aged 18 – 25]. This Bup/Nx OTP was designed and implemented by a sequential multi-step process: 1) The need for Bup/Nx OTP was defined. Substance use is a major problem in the U.S. (more than $700 billion spent annually on health care—costs related to crime and lost work productivity). There is also a lack of access to treatment. Only a small percentage of patients with OUDs obtain treatment; 2) Key decision makers were identified and consulted regarding program development, and their support was elicited and obtained; 3) Multi-disciplinary (psychiatry, BH counseling, nursing and support staff) team meetings were held. Input was solicited; objections to implementing a Bup/Nx OTP program were discussed, debated and resolved; 4) Resource allocation was determined and a budget was developed; 5) The model was based on safety; evidence-based practice; and sensitivity to local, institutional and community needs. A professionally mediated support group model augmented by individual therapy was the primary mode of treatment; 6) Policies and procedures defined treatment goals, methods and measurement of outcomes; 7) Program operation commenced within six months of proposal; 8) Preliminary 36-month review of treatment outcomes is commencing. **Conclusion:** 1) Bup/Nx outpatient treatment is viable in a "safety net" hospital; 2) Insightful policies and procedures ensure that medication-assisted treatment (MAT) is combined with psychosocial treatment while minimizing diversion and misuse of Bup/Nx; 3) This project suggests the need for more detailed analysis to define "best practices" in delivery of Bup/Nx OTP in a "safety net" setting.

NO. 5

THE UNIVERSITY OF VIRGINIA-GUATEMALA INITIATIVE: MENTAL HEALTH CARE DELIVERY IN LOW-RESOURCE SETTINGS

Lead Author: Souraya Torbey, M.D.
Co-Author(s): Jessica Ohana Gonzales, David Burt, Larry Merkel

SUMMARY:
In 2012, Disability Rights International declared that the conditions of the patients at Frederico Mora were dreadfully inhumane. Consequently, the Inter-American Commission on Human Rights issued an "emergency measure" ordering the government to address these issues. On December 4, 2014, the BBC issued a report regarding the deplorable state of psychiatric services in Guatemala, documenting that nothing had been done. As part of the University of Virginia-Guatemala initiative, the psychiatry department initiated a project with the goal of creating a collaboration aimed at improving mental health. A psychiatry resident who acted as an investigator spent four weeks in Guatemala researching the strengths and weaknesses of the present mental health care system. The field work consisted of interviewing different mental health workers ranging from psychologists working with individuals in private practice, victims of the war in rural areas, sexually abused women and prisoners convicted of drug trafficking, to professors at the public universities. Based on this field work, it is evident that the mental health system in Guatemala lacks infrastructure and organization. The main providers of mental health outside of the capital were found to be fresh psychology student graduates with no training in psychotherapy. The findings of this fieldwork will be presented and discussed. The next step in our project is to create an interactive learning experience between the Guatemalan public schools psychology department

and the Department of Psychiatry at UVA, utilizing telepsychiatry technology. The goal is to implement psychotherapy workshops in order to create a sustainable learning environment that will increase the capacity of local mental health providers while gaining experience working in developing settings. It is hoped that this model may provide a blueprint for increasing access to and effectiveness of delivered care in other low-resource settings.

NO. 6

CLINICAL IMPLICATIONS OF COMPANION ANIMALS IN PATIENTS WITH SERIOUS MENTAL ILLNESS

Lead Author: Sa Eun Park, M.D.
Co-Author(s): Gary Swanson, M.D.

SUMMARY:

Clinicians ought to examine the role of companion animals (pets) in patients with serious mental illness and the clinical implications of such animals in the care of mental health patients. According to the 2015 – 2016 APPA(Animal Pet Products Association) National Pet Owners Survey, 65% of U.S. households own a pet. With an estimated 25% of U.S. adults having a mental illness, there is an increasing need to evaluate the role of companion animals in patients with mental illness and to elucidate the clinical implications of companion animals in the care of mental health patients both in the inpatient and outpatient mental health care settings. Companion animals can affect many aspects of a patient's life, including social environment, financial stressors, primary support and social recovery. Although many studies have shown the physical and psychological benefits of companion animals, not many studies have explored the significance of companion animals in the lives of mental health patients as a social factor and the clinical implications for mental health providers when making decisions regarding patient care. Discussion points: 1) Consideration of companion animals as a significant social factor during initial evaluation of a mental health patient; 2) Clinical implications of the presence of companion animals when making clinical decisions that may impact the patient's ability to care for or maintain such animals (i.e., inpatient hospitalization, medications); 3) Evaluate the need for mental health facilities to provide social services in the form of temporary/permanent placement of companion animals when needed to ease patients' concerns about their animals' safety and well-being; 4) Evaluate the role of companion animals in patients' recovery from mental illness and discuss avenues of social rehabilitation through companion animals; 5) Discuss the barriers to companion animal ownership in mental health patients.

NO. 7

IMPEDIMENTS TOWARD CLOZAPINE USE: A SURVEY OF PSYCHIATRIC TRAINEES

Lead Author: Katherine Robertson, M.D.
Co-Author(s): Venkata Kolli, M.B.B.S.

SUMMARY:

Background: 20 – 60% of patients with schizophrenia experience treatment resistance, i.e., poor response to medication. Clozapine is an antipsychotic agent reserved for treatment-resistant schizophrenia and has by far the best treatment response. 30 – 60% of patients with treatment resistance improve with clozapine. There seems to be a propensity towards antipsychotic polypharmacy in the clinic population. **Objective:** We plan to survey the aptitudes among psychiatry trainees toward prescribing clozapine. **Methods:** Following IRB approval, a paper-based survey questionnaire was circulated to all psychiatric trainees at the Creighton Residency Training Program to understand attitudes toward clozapine use and monitoring in the fall of 2013. **Results:** A total of 24 out of 38 psychiatric trainees completed this survey with one survey request. They rated their comfort level at prescribing clozapine at a mean of 2.8 on a Likert scale of 1 to 5, with 5 being most comfortable in prescribing clozapine. Eleven trainees preferred clozapine with two antipsychotic failures, and nine trainees selected trying another nonclozapine antipsychotic as a third line. Only three trainees preferred antipsychotic polypharmacy over clozapine. Eleven trainees reported knowledge deficits as an impediment to clozapine use, and eight trainees cited the tediousness associated with monitoring as a deterrent. Six trainees claimed metabolic side effects being problematic. **Conclusion:** Trainees recognize several impediments to clozapine prescription, and there is a lesser preference toward antipsychotic polypharmacy.

NO. 8

DEVELOPMENT OF A METRIC FOR EVALUATING INFECTIOUS DISEASE RISK COMMUNICATION STRATEGIES

Lead Author: Daniel Witter, M.D., Ph.D.
Co-Author(s): Andrew Pierce, M.D., Sarah Bolis, M.D., Kyle Gray, M.D., Veronica Novosad, M.D., Marta Olenderek, Joseph Thornton, M.D.

SUMMARY:

Risk communication is an ever-growing field of study broadly defined as the strategies used in conveying information about potential risks of a given situation to a particular group of people. For mental health professionals, the importance of risk communication is highlighted by the fact that perception of risk can be distressing and is frequently the cause of anxiety and PTSD. Metrics to measure the quality of risk communication strategies are essentially nonexistent. Our aim was to develop such a metric and assess inter-rater reliability. Using a set of twelve risk communication guidelines proposed by experts in relation to infectious disease, our team of six psychiatric residents and med students used a survey-based rating of ten distinct media messages regarding the Ebola outbreak of 2014 and then analyzed the results for inter-rater reliability. With the survey answers treated as nominal data (i.e., agree with guidelines, disagree, not applicable), our analysis of the data for all raters using the Gwet's AC1 statistic indicated substantial inter-rater agreement: 71% (0.65 to 0.78, $p<0.005$). With the survey answers ranked and treated as ordinal data (i.e., strongly agree with guidelines, agree, not applicable, disagree, strongly disagree—ranked one to five), our analysis of the data for all raters using the Gwet's AC2 statistic also indicated substantial inter-rater agreement: 66% (0.60 to 0.73, $p<0.005$). While a great deal has been written regarding risk communication and the way it should be practiced, it is primarily opinion, albeit from experts and based on a solid theoretical framework, but few if any efforts have been made to evaluate the quality of risk communication after it has been conveyed. Our study indicates that such an evaluation is possible and can be performed with substantial inter-rater reliability. We propose that such evaluations can improve the overall quality of risk communication strategies with the ultimate goal of reducing distress related to potential infectious disease crisis situations, thereby addressing the mental health needs of the public.

NO. 9

PREVALENCE OF VITAMIN D DEFICIENCY IN PATIENTS WITH MENTAL ILLNESS WHO ARE HOSPITALIZED IN INPATIENT PSYCHIATRIC SETTING

Lead Author: Lakshmi Priya Munnangi, M.D.

Co-Author(s): Panagiota Korenis, M.D., Aos Salah Mohammed Ameen, M.D., Ahmed Albassam, M.D., Monica Badillo, M.D., Paulina Riess, M.D., Muhammad Zeshan, M.D., Viviana Chiappetta, M.D., Timur-Metin Mujdaba, M.D., Jeffrey Levine, M.D.

SUMMARY:

Vitamin D deficiency is common in the U.S. population, with an overall prevalence rate of 41.6%. Research also indicates that it is much more common in particular minority populations, with the highest rates seen in African Americans (82.1%) and Hispanics (69.2%). Vitamin D deficiency has been associated with numerous medical and psychiatric symptoms. The medical problems include skeletal disorder, malabsorption syndromes, hyperparathyroidism and some lymphomas. In addition, vitamin D deficiency may be precipitated by certain medications, including anticonvulsant medicines. Epidemiological studies suggest that low levels of vitamin D are associated with mental illness, including autism, dementia, depression and schizophrenia. Reviewed literature suggests that psychiatric patients are less likely to present for follow up with primary physicians. Psychiatrists thus play a vital role in managing medical issues that arise with their patients and are instrumental in educating their patients about the need for proper follow up and care. While there have been studies showing that vitamin D deficiency has been linked to an increased incidence in depression, the results assessing the prevalence of vitamin D deficiency on an inpatient psychiatric unit remain inconsistent. We conducted a retrospective case control study of patients who were admitted to the inpatient psychiatric service for a period of three months. Using the endocrine society clinical practice guideline, we assessed risk factors for vitamin D deficiency and identified those patients who were at risk for vitamin D deficiency on the inpatient psychiatric service. This poster will explore the prevalence of vitamin D deficiency on the psychiatric inpatient service, identify specific clinical risk factors of such patients, and consider clinical implications as well as treatment strategies and management. A discussion of the utility of having routine vitamin D screening for all inpatients will also be explored. In addition, we aim to bring to light the need for future investigations to better understand the implications of vitamin D deficiency in the psychiatric population.

NO. 10

VISTA IMPROVEMENT PROGRAM: A LONGITUDINAL CARE MODEL FOR THE INPATIENT PSYCHIATRIC SETTING

Lead Author: Andrew Pierce, M.D.

Co-Author(s): Daniel Witter, M.D., Ph.D., Khurshid Kurshid, M.D.

SUMMARY:
The vista improvement (VIP) program is a targeted intervention aimed at patients who experience frequent and recurrent admissions to inpatient psychiatric units. The VIP program consists of interventions in five core areas of patient health: diet, sleep, exercise, interpersonal communication/social rhythms and health education. Each of these core areas is addressed with specific activities designed to impact the lives of patients with mental illness when admitted to the inpatient unit and after they have been discharged. The VIP program was launched in January 2014 and is currently in use on the "Mood Disorder Unit" at the UF Health Inpatient Psychiatric Hospital. Staff training on program implementation and provider education has been instituted. Practitioners created an EMR order set to increase accessibility and ensure ease of use. Integrative partnership by administration, physicians, nurses, dieticians and pharmacists was an integral step to providing the optimum impact of the program and was achieved early in the program's formulation. This project aims to demonstrate the efficacy of the VIP program by quantifying appropriate outcome measures. Primary measures evaluated are average length of stay and readmission rate. Secondary measures include body mass index, hemoglobin A1c and Beck Depression Inventory Scale ratings. Primary and secondary outcome measures evaluate changes surrounding the implementation of the VIP program with data gathered from July 2013 through December 2014. Establishing a model of care that incorporates the chronic and relapsing nature of many mental illnesses is imperative to efficient and effective health care. Recognizing that patient health care lies on a continuum and using acute psychiatric admission as an opportunity to address overall wellness may lead to healthier and happier patients while simultaneously reducing the average length of stay and readmission rate. The VIP program was developed to enrich the well-being of psychiatric patients at the UF Health Inpatient Psychiatric Hospital and improve outcomes by emphasizing the five core areas. As this project advances, outcome measures will be tracked to evaluate the efficacy of the program and inform future directions of interest, including its generalizability to other settings.

NO. 11

PROMISING EMPLOYABILITY INTERVENTIONS TAILORED TO CLIENTS WITH SEVERE AND PERSISTENT MENTAL ILLNESS: AN INTERSECTORAL ENDEAVOR IN SAINT JOHN, NB

Lead Author: Laura M. Downing, M.D.
Co-Author(s): M. Havanga, M.D., C. Lamschtein M.D., J. Tynski, R.N., W. Moffatt, O.T.

SUMMARY:
Background: Severe and persistent mental illness has a significant impact on a person's direct and indirect economic costs, one's circle of support, and society. The RiskAnalytica economic simulation framework provides population health forecasts based on illness or disability type and frequency and demographic variables, assuming constant prevalence rates of mental illnesses. They predict a direct cost exceeding $290.9 billion by 2041. The indirect costs could reach $15 billion in 2041. Furthermore, as Canada's population continues to age and grow, the economic consequences of mental illness will surely increase. This population faces significant challenges in entering the competitive workforce, and, unfortunately, unemployment is a reality. In June 2015, the New Brunswick unemployment rate was 10.8% compared to Canada's unemployment rate of 6.8%. There is a well-established link between mental illness and poverty and compelling reasons to adopt new, proactive strategies to address the unemployment rate and related readmission rate to a psychiatric hospital. **Objective:** Within the framework of the Action Plan for Mental Health in New Brunswick, our proposal was to generate strategies for circumventing barriers to innovative models of supportive employment by utilizing current resources. While there is a wide spectrum of supportive employment models, we were striving to generate a novel, cost-effective employability model feasible in Saint John that could be extrapolated to other rural areas. **Methods:** Electronic searches of PubMed, PsychINFO and ScienceDirect were undertaken, excluding all articles published prior to 1985. The following search terms were used: mental health, employment, severe and persistent mental illness, psychosis, schizophrenia, supported employment, social enterprises, and individual placement and support (IPS). Additionally, available grants for persons with disabilities were reviewed. **Discussion:** Supported employment seems to significantly increase levels of any employment, as well as increase the length of competitive employment when compared to other vocational

approaches. Furthermore, supported employment showed an increase in the length of any form of paid employment and job tenure for competitive employment. It was found that the ideal structure involved practitioners from separate agencies who displayed the ability to coordinate services effectively, linking with existing agencies in order to avoid service duplication and optimize resources. We identified several organizations able to collaborate in the development of self-sustained, successful social enterprise. The initiative begins with the assembling of clients, family representatives and the talents of community mental health case managers. The program is meant to have a lasting impact beyond the initial funding, with the aim of steering clients with severe and persistent mental illness out of poverty and into recovery.

NO. 12

THE NECESSITY OF A CHILD AND ADOLESCENT DETOX UNIT WITHIN A CHILD AND ADOLESCENT PSYCHIATRIC UNIT

Poster Presenter:Jessica S. Bayner, M.D.
Lead Author: Kalliopi S. Nissirios, M.D.
Co-Author(s): Srinivasa R. Gorle, M.D., Jasmine Kearse, M.D.

SUMMARY:

Substance abuse is a pestilence with constantly rising rates. It is an epidemic that affects every sector of the population regardless of age, gender, background, culture or financial status. We come across children as young as eight years old, as well as the elderly, abusing drugs. Adolescent drug abuse can be troubling, as it affects individuals at a very sensitive age and delays their emotional and intellectual development. Substance abuse is becoming one of America's worst health problems, and the economic impact of early drug abuse is staggering. It has been documented that substance abuse disorder is commonly found in adolescents who suffer psychiatric disorders (ADHD, ODD, autism). Lifetime prevalence of dual diagnosis that includes alcohol, drug and mental illness is 32.7%; the prevalence rate for alcohol and mental disorders is 13.5%, and the prevalence rate for other drug disorders and mental illness is 6.1%. Our objective is to highlight the necessity of a detox unit within a child and adolescent psychiatric unit.

NO. 13

THE NEED FOR INITIAL ASSESSMENT INTAKE IN THE PRISON POPULATION

Poster Presenter:Jessica S. Bayner, M.D.
Lead Author: Kalliopi S. Nissirios, M.D.
Co-Author(s): Jasmine Kearse, M.D.

SUMMARY:

According to the 2006 Bureau of Justice statistics special reports and the 2004 surveys, an estimated 56% of state and 45% of federal prisoners had a mental health problem. These numbers seem to be increasing, and there are three to five times more patients with mental illness in prisons than in psychiatric facilities. Additionally, many of these patients have not only one mental health issue, but also a co-occurring substance abuse disorder, making their illness more difficult to treat. Currently, we are likely to miss a substantial number of prisoners with psychiatric disorders. A key priority to treat and secure the mental health of the prison population is effective screening of inmates who are at risk for undetected psychiatric disorders or who have a disorder and require continuation of care while incarcerated. Through telepsychiatry, patients who were previously unable to get treatment now can have a sense of freedom, confidence and understanding of their illness. This would make patients satisfied with their level of care and more apt to follow instructions. This method has been shown to be an effective, cost-efficient alternative to traditional psychiatric evaluations and has the potential to benefit both patients and providers.

NO. 14

CAN EXAMINATION OF HAITIAN VODOU IN A DIFFERENT LIGHT OPEN DOORS OF POTENTIAL COLLABORATION LONG CLOSED IN THE MENTAL HEALTH FIELD?

Lead Author: Jennifer Severe, M.D.

SUMMARY:

Background: The substantial variability in people's perception of Vodou and the critical and demeaning tone that is often unwittingly a characteristic of its practices bring about low credence of potential collaboration with Vodou healers and Western psychiatry. Nonetheless, it is impossible to characterize the potential impact of Vodou on mental health care without an understanding of the underlying rationale through which it acts. **Methods:** The author completed a literature review on Vodou and mental health stems from PubMed from196 psychiatric case vignettes and paradigms of

collaboration between Western psychiatry and Vodou healers in Haiti. **Results:** Vodou is an African heritage intertwined with Catholicism and Protestantism, slightly different from the Louisiana and Latino Voodoo. The term "Vodou psychiatrist" hatched in the Western literature more than 50 years ago, and examination has revealed striking similarities between the therapeutic framework of Vodou and that of Western psychiatry. The World Health Organization refers to Vodou healers as "consultants or co-therapists." Moreover, the Vodou encounter favors a schema consonant with supportive psychotherapy, evidenced by the case vignettes. Haitians with suicidal thoughts are 7.6 times as likely to prefer Vodou over hospitals or clinics. Vodou explanatory frameworks displaced blame and stigma away from suicidal individuals. Vodou healers have collaborated with Western psychiatrists in the development of a culturally informed assessment tool for depression in the wake of the 2010 devastating earthquake in Haiti. Vodou healers are now involved in culturally adapted cognitive behavioral therapy interventions. **Conclusion:** Consensus has yet to be reached on any potential collaboration in an era where bridging different disciplines of faith and psychiatry is being promoted. With training and open collaboration, Vodou healers will feel empowered to help fill the gap in mental health care delivery in Haiti and the United States. From a general standpoint, as skilled mental health providers, we have a good vantage point to reconcile and integrate Vodou practices toward consolidation in a way that does justice to the presence of Vodou in our patients' beliefs.

NO. 15

FILLING THE GAPS: IMPROVING MEDICAL RESIDENTS' EDUCATION ON ALCOHOL USE DISORDERS

Lead Author: Igor Epstein, D.O.
Co-Author(s): Jennifer Michaels, M.D.

SUMMARY:

BACKGROUND AND **Objective:** There is a well-known stigma in our society against alcoholics and drug users. It is not much different in the medical community, as patients with alcohol and substance use disorders (AUD and SUD) often bring frustration and are considered a very challenging population by general medical practitioners. A lot was written on establishing treatment relationships with alcoholics as well as on systematic approach to alcohol and drug abuse consultation in the general hospitals. Much effort has been put into improved education of medical care providers of different fields in alcohol and other drug abuse, though no consistent results in patient care were observed. Internal Medicine (IM) residency training programs often offer suboptimal education on recognition and management of AUD despite multiple efforts to incorporate better training on diseases of addiction through ACGME competencies and curricular models. We attempted to assess the current level of education on AUDs in IM residents of different levels of training and to investigate if an educational event could improve knowledge on the subject. **Methods:** The study was conducted in a small size community teaching hospital. A group of predominantly IM residents (n=25) received an experimental practical curriculum on AUDs with focus on diagnosis, assessment and treatment of withdrawal, as well as long-term management following detoxification. Participants completed written multiple choice tests and feedback questionnaires before and following the interactive didactic event. **Results:** Pretests showed a significant difference between the trainees based on levels of education. Following the intervention analysis of written test scores revealed an improvement in both academic and clinical domains of knowledge among all subsets of participants ($p < 0.01$). Self-assessment of residents' confidence and competence also improved. Interestingly, the change in self-reported knowledge of treatment was not statistically significant ($p = 0.57$). Residents found institution-specific disposition guidelines for alcohol intoxication to be especially helpful. **Conclusion:** Additional education on AUDs could be integrated in IM residency curriculum and could increase the knowledge of recognition and management of AUD among physicians-in-training. Additional training might be required to further increase awareness of treatment options past acute inpatient detoxification. Assessing the changes in clinical practice would be necessary to determine the actual benefit of the proposal in patient care. Similar curricula could be designed for other drug use disorders. This intervention could be successfully implemented in other specialty and primary care residency programs.

NO. 16

OPTIMIZING PSYCHOPHARMACOLOGY EDUCATION IN PSYCHIATRIC RESIDENCY TRAINING: AN OVERVIEW OF THE EIGHTH EDITION OF THE ASCP'S MODEL CURRICULUM

Lead Author: Aimee Dereczyk, M.D.

Co-Author(s): Lamis Jabri, M.D., Deepak Prabhakar, M.D., M.P.H.

SUMMARY:
In recent years, the practice of psychopharmacology has seen significant advancements. Trainees need to be aware of the basic tenets of these advancements in order to be prepared for the independent practice of psychopharmacology. Residency programs often have limited resources to help teach psychopharmacology appropriate to the level of training. A survey of residency training directors reflected a need for a comprehensive yet customizable psychopharmacology curriculum. We present an overview of one such curriculum, the American Society of Clinical Psychopharmacology's (ASCP) Model Psychopharmacology Curriculum (MPC), currently in its 8th edition. The curriculum is available through a new electronic interface, making it easily accessible and perhaps flexible for timely updates. MPC is up to date as of late 2014; it includes a guide to help organize content over the four years of residency training. The content includes more than eighty PowerPoint® presentations covering a wide variety of psychopharmacology topics, organized by diagnosis or medication class and subdivided into Crash, Basic and Advanced courses. Core knowledge and skill requirements are made explicit, while topics of special interest are grouped separately. This edition incorporates updates in geriatric psychiatry, child psychiatry and substance use disorders, as well as legal, regulatory and ethical matters. Appendices include treatment algorithms, rating scales, online resources, evaluation tools and pearls for documentation. Moreover, MPC promotes principles of adult learning theory and includes case-based exercises, clinical conferences and competitive learning games. In conclusion, MPC provides a platform for robust psychopharmacology learning and addresses the gaps in psychopharmacology education during residency training.

NO. 17

SEEKING A BETTER OUTCOME: A SURVEY ABOUT LGBTQQI2S KNOWLEDGE

Lead Author: Juan A. Rivolta, M.D.
Co-Author(s): Luisa Gonzalez, M.D., Amina Hanif, M.D., Panagiota Korenis, M.D., Muhammad Zeshan, M.D.

SUMMARY:
Statistics show that 3.4 percent of American adults identify themselves as lesbian, gay, bisexual, transgender, queer, questioning, inter-sex or two-spirited (LGBTQQI2S). The LGBTQQI2S community suffers from disparities in physical and mental conditions, such as higher rates of smoking, alcohol, substance abuse and STDs (including HIV), as well as higher risk for anxiety, depression and suicide. National guidelines for LGBTQQI2S medical care already exist to assist health care providers in offering these patients and their families a more welcoming, safe and inclusive environment. However, lack of specific training of mental health providers often results in insensitivity, discrimination, mistreatment and inappropriate medical care. The goal of our study was to assess the impact that training and education for mental health providers may have on their fundamental knowledge of the LGBTQQI2S community, their specific medical issues and the current guidelines for their medical care. We anonymously surveyed 75 Bronx-Lebanon Hospital Center staff members before and after a series of educational interventions that included lectures, grand rounds and pamphlets. The surveyed staff encompassed psychiatrists, residents, nurses, social workers and activity therapists, and the anonymous survey consisted of 22 questions and was offered both electronically and in a paper format. Our poster will present the pre- and postintervention data, which showed an increase (improvement) in the providers' fundamental knowledge of the LGBTQQI2S community, their specific medical issues and the current guidelines for their medical care after the educational intervention. We aim to demonstrate that these educational interventions can improve a provider's essential knowledge of the LGBTQQI2S community, which may lead to increased awareness and sensitivity, decreased discrimination and improved overall medical care to this patient population.

NO. 18

STANDARDIZATION OF THE HANDOFFS IN PSYCHIATRY RESIDENCY TRAINING

Poster Presenter:Amanpreet K. Mashiana, B.S.
Lead Author: Scott Clark, M.H.S.
Co-Author(s): Rashi Aggarwal, M.D.

SUMMARY:
Background: Transfer of patient care from one physician to another is an important factor in preventable adverse health care events. In 2014, The Joint Commission found that failures in

communication, such as handoffs, were involved in 64% of sentinel health events. Further, when death or permanent loss of function due to delay of treatment occurs, the number one culprit is failures in communication. As duty hour requirements have changed in recent years, the number of handoffs has increased, leading to well-documented impacts on patient care. Disciplines such as medicine, pediatrics and emergency medicine have taken steps to address this problem. However, a recent survey of psychiatry residency program directors found that one third of programs do not have a curriculum on handoffs. Even in programs with a curriculum for handoffs, only a quarter of them implemented assessments for evaluating resident competence at handing patients off. Current obstacles include the lack of a specialty-specific standardized curriculum on handoffs and the lack of a situation-specific standardized curriculum within clinical settings, making it difficult to communicate the various types of information for different health settings (e.g., emergency room, inpatient). **Objective:** This project seeks to study what work has been completed in handoff improvement specific to the field of psychiatry. This poster will identify and discuss candidates for implementation of a mnemonic device specifically for psychiatry residency programs. The goals of this poster are to 1) highlight the lack of work done to improve handoffs within psychiatric residency programs and 2) detail the most extensively studied and potentially applicable handoff mnemonics and education interventions for psychiatry residencies. **Discussion:** There is currently a lack of studies on handoff curriculum and evaluation of handoff quality across psychiatry residency programs. However, there are several promising candidate mnemonics, which have been built and tested for improving the quality of handoffs, notably including I-PASS (illness severity, patient summary, action list, situation awareness and contingency planning, synthesis by receiver), SBAR (situation, background, assessment, recommendation) and SIGNOUT (sick/DNR, identifying data, general course, new events, overall status, upcoming plan, tasks for overnight). In addition, the curriculum to implement such handoff mnemonics is equally as important as the mnemonic itself. Many different methods have been attempted to implement mnemonic systems in residency programs, including biweekly meetings, posters, stickers on phones, group role-playing and pocket cards. While mnemonics have been broadly applied to some specialties, to our knowledge, no studies have tested mnemonics in the psychiatric setting.

NO. 19

IS MY EVALUATION TRULY ANONYMOUS? A SURVEY OF RESIDENTS ABOUT THEIR EVALUATION OF FACULTY PHYSICIANS IN A COMMUNITY HOSPITAL

Lead Author: Varma Penumetcha, M.D.
Co-Author(s): Pankaj Lamba, M.D., Jeffrey Kedrowski, D.O., Mohan Krishna Bangaru, M.D., Susan Graham, M.S.W., Anthony Vettraino, M.D., Susan Greenwood-Clark, M.B.A., R.N.

SUMMARY:
Objective: The ACGME resident survey is taken annually with results aggregated in domains of program function like compliance with duty hours, educational content, evaluation, resources and faculty. While questions related to duty hour violations are well elaborated given its resonance with the overall program environment, other content areas do not receive similar attention. GME administration faces difficulties in understanding underlying issues that might contribute to these measures due to a dearth of specific actionable information from the survey results. One of the content areas we focused on is residents' perception of anonymity of their evaluation of the attending faculty. **Methods:** We surveyed 129 residents using Survey Monkey (Paulo Alto) with 11 questions pertaining to resident evaluation of the faculty. Resident members from the hospital quality improvement (QI) committee formulated the survey questions. The senior faculty in the QI committee and the chief residents of the internal medicine and family medicine residencies reviewed the survey questions to improve face validity. **Results:** About 72% of the 129 residents working at St. Mary Mercy Hospital responded to the survey. Validating the responses given in the ACGME survey, the residents did identify similar concerns, especially those related to the confidentiality of their evaluation of the faculty. We were able to identify some gaps in their knowledge about the evaluation system, which might have contributed to these concerns. **Conclusion:** An extended web-based survey can prove instrumental in understanding the nuances of the learning environment specific to any institution and can provide actionable information upon which useful administrative changes can be made.

NO. 20

COPING WITH PATIENT SUICIDE: A CROSS-SECTIONAL STUDY ON THE EFFECTS OF PATIENT SUICIDE ON PSYCHIATRY RESIDENTS AND FACULTY

Lead Author: Archana Sugumar, M.B.B.S.
Co-Author(s): Sarita M. O'Neal, M.D., Avinash Boddapati, M.D., Vivek Anand, M.D.

SUMMARY:
Suicide is a serious public health concern. It is the 10th leading cause of death in the United States. There is sparse literature on the impact of suicide on clinicians and the ways providers respond to suicide. An estimated half of all psychiatrists lose a patient to suicide, and approximately one third of these losses occur during residency. One in six psychiatry interns experience patient suicide. This distress may be inversely proportional to the number of years in practice. Clinicians can react in a myriad of ways, ranging from personal or professional impairment to problems with self-esteem and mood. Additional reactions may also reflect a fear of litigation and retribution. Patient suicide encountered during training can also add to provider stress and may impair learning. The impact of such an event may be buffered by adequate emotional support, appropriate mentorship, institutional support and constructive peer review. In this innovative ongoing study, we aim to examine mental health providers' reactions to patient suicide and their ways of coping following patient suicide in order to help inform institutional procedures. **Objective:** To examine and compare 1) The impact of patient suicide on psychiatry trainees and clinicians and 2) The effects on personal life and the practice of psychiatry after encountering patient suicide. We also aim to inform guidelines to residency-training curricula that may foster learning and adequate use of resources. **Methods:** We have developed a questionnaire based on a review of existing literature. The survey instrument will be confidentially administered to all psychiatric trainees, post-trainees and attending staff in eastern North Carolina. The survey will be voluntary and anonymous. Additionally, no identifying information about providers or patients will be obtained. The questionnaire will help collect data on demographic characteristics (gender, age, specialty, trainee or post-trainee status, years in practice), number of suicidal events encountered in practice, duration and impact on professional life (time off work, altered documentation or patient management, changes in perception of professional competence, professional helplessness, suicide awareness), effects on personal life (neuro-vegetative symptoms, changes in self-confidence), and utilized coping strategies (substance use, funeral attendance, spouse/family or spiritual support). Statistical analyses will be performed using the Fisher's exact test and the student's t test. We will use linear models for examining multiple predictors of outcome. A two tailed p value of $p<0.05$ will be considered statistically significant. **Results:** This study may inform region-wide changes in resident training curricula and post-patient suicide resource availability to practicing clinicians. The changes may include modifying didactic curricula and incorporation of seminars and resources tailored to help providers cope with patient suicide.

NO. 21

IMPROVING RESIDENT HANDOFFS USING QUALITY IMPROVEMENT MATRIX

Lead Author: Katherine Robertson, M.D.
Co-Author(s): Katelyn Thompson, D.O., Nargis Sadat, M.D., Venkata Kolli, M.B.B.S.

SUMMARY:
Background: ACGME mandates that an appropriate patient handoff is completed during all transitions of care. The Joint Commission (JCHACO) considers handoff to be an important tool in patient safety. With the advent of duty hour restrictions, there has been an increase in transitions of care, making the handoff process more imperative to reduce medical errors. However, adopting a uniform process for residency programs whose training spans across multiple sites is problematic. We describe our experience in the Creighton Psychiatry Residency Training Program in improving the handoff process across residents and faculty members using a quality improvement matrix. **Methods:** A QI team of 10 psychiatry residents who were at multiple stages of training was formed. E-handoff was preferred online software for handoff by Creighton GME. Working as a group, the team reviewed the current handoff system, potential problems in implementation, measurable outcomes, standards and required culture change. Training sessions were delivered to all psychiatry residents. To improve utility, a psychiatry handoff template was made, and the handoff process was piloted in one site. Building on this experience, this process was spread to all major psychiatry training sites with transitions of care. Each site was allocated site liaisons to address training site-specific problems. A small team of three members who would analyze the performance, i.e., residents and faculty member e-handoff use, was

formed. A similar team was formed to work with the handoff software vendor to adapt the template to the program's needs. Recognizing the need to promote culture change, quality champions were chosen from each class. Performance management was made during the monthly meetings using the QI – FADE model, i.e., focus, analyze, develop and execute. **Discussion:** Our QI process has significantly improved the uptake of handoffs among psychiatry residents. Site liaisons and class quality champions helped address the cultural blocks inherent with new processes and prepared trainees for change. We recommend similar QI processes in psychiatry training programs spanning multiple sites. FUTURE GOALS: Having improved the resident handoff, our team is currently using the QI process to promote the use of e-handoff data for clinical supervision.

NO. 22

AN ASSESSMENT OF ATTITUDES TOWARDS HOMELESS INDIVIDUALS WITH MENTAL ILLNESS AMONG MEDICAL STUDENTS AND PHYSICIANS

Lead Author: Pallavi Joshi, M.A.
Co-Author(s): R. Rymowicz

SUMMARY:

Background: Homelessness affects men, women and children of all races and ethnicities, and one third to one half of homeless individuals in the United States have been estimated to have severe mental illness. These individuals experience stigma and decreased access to health care. Literature shows that only half of all psychiatric residency programs offer training in working with homeless individuals, and few medical schools offer clerkships in working with homeless individuals. This leaves medical students and residents without adequate knowledge about a significant and vulnerable population with unique ethical considerations. This study was conducted to assess resident and medical student attitudes toward homeless individuals with mental illness. **Methods:** Attitudes toward mental illness in homeless individuals were assessed at three different levels of training and experience: medical students who had not completed their psychiatry rotation, medical students who had completed their psychiatry rotation and psychiatry residents. A self-report questionnaire assessed 1) Knowledge about violence and substance use in homeless individuals with mental illness; 2) Social distance, with questions adapted from the Fear and Behavioral Intentions (FABI) Toward the Mentally Ill questionnaire; and 3) Social acceptance and social stigma, with questions adapted from the Community Attitudes to Mental Illness (CAMI) questionnaire. The questionnaire also documents self-reported sociodemographic characteristics and personal experience with mental illness and homelessness. Exploratory data analysis was carried out to further understand the relationship between personal experience, level of training and attitude. **Conclusion:** Preliminary results suggest that clinical experience may result in more progressive attitudes toward homeless individuals with mental illness than mere didactic training. Improving care for this population requires a better understanding of both stigma and interventions that can change negative attitudes and behavior. Psychiatry faculty can reduce stigma and increase trainee familiarity by providing valuable teaching opportunities in community settings where homeless individuals receive care.

NO. 23

THE COMPASSION CRISIS IN MEDICAL EDUCATION

Lead Author: Rachel Conrad, M.D.
Co-Author(s): Amy McGuire, J.D., Ph.D., Justin Springer, Ph.D., Chris Martin, M.D., Johannes Grote, Ph.D.

SUMMARY:

Empathy is critical to effective and ethical medical care. Our language frames how we think about the patients whom we serve as well as how they think about themselves and their illnesses. While empathic narratives promote effective relationships and improved clinical outcomes, describing patients with derogatory language is related to worse clinical outcomes and trainee distress. Despite curriculum changes to promote ethics and humanism, medical students are vulnerable to lasting impressions from frequent exposures to unethical behavior and derogatory language during clinical rotations. Tools from recovery-oriented mental health's "person-first language," DBT's "phenomenological empathy," mindful self-compassion and mindfulness-based stress reduction have potential to transform the way that physicians treat their patients, each other and themselves.

NO. 24

EFFECTIVE MENTORSHIP DURING RESIDENCY TRAINING: NEEDS ASSESSMENT AND PERSPECTIVES OF RESIDENTS

Lead Author: Hermioni Lokko, M.D., M.P.P.

Co-Author(s): Gertrude Makurumidzie, Christina Borba, M.P.H., Ph.D., Karen Donelan, Sc.D., Theodore Stern, M.D.

SUMMARY:
Background: Mentoring relationships are essential components of professional development in medicine. The many benefits to having mentors in academic medicine include serving as a catalyst for career success and development, promoting career advancement, improving productivity with regard to publications and grants, and improving self-efficacy in teaching. Residents have a lot to gain from having effective mentoring relationships during their residency training. The impact of mentor/mentee training programs on residents during training is unknown. In this study, we aim to gain a better understanding of residents' experiences with mentorship during training, potential barriers to forming mentoring relationships and their perceptions of how mentors impacts their training and careers. **Methods:** A cross-sectional mixed method online survey (administered with SurveyMonkey) was administered to 334 senior medical and surgical residents (PGY3 and above) at the Massachusetts General Hospital, Boston, MA. We had a response rate of 61.07% (N=204). Questions explored trainees' knowledge and experiences with mentorship. The online survey took approximately five minutes to complete. Participants were recruited through their program directors and chief residents. Informed consent and authorization was implied by voluntary participation of residents, and approval was granted by the Partners Health care Institutional Review Board. Data were collected between March and May 2015. Quantitative data was analyzed using SPSS version 17, and qualitative data was analyzed using content analysis. **Results:** 52.5% of residents reported they self-initiated their primary mentorship relationships as compared to 20.6% who were assigned mentors by their training program. 36.46% of female residents reported they have no structure to the frequency of meeting with their primary mentors as compared to 18.28% of male residents. The top three characteristics of an effective mentor qualitatively reported by residents were approachable, available and supportive. 48.7% of residents reported yes to the question "Do you have needs for professional mentoring that are not being met? If so, describe." Some of the common themes from residents included difficulty in finding faculty with similar interests, not having enough research mentors and finding mentors who can help them with work-life balance. **Conclusion:** The relatively high response rate indicates the importance residents attach to issues of mentorship, which should be a priority of residency program leadership. Most residents initiate their own primary mentorship relationship. Residency training programs can augment individual efforts with formal mentorship programs. Having a community of mentors is more effective than just one; training programs should emphasize that one mentor is not sufficient. Most academic medical centers have established the value of mentor training programs for faculty, and residents want similar training.

NO. 25

FEASIBILITY AND ACCEPTABILITY OF PERFORMING SCREENING, BRIEF INTERVENTION AND REFERRAL TO TREATMENT (SBIRT) ON AN INPATIENT UNIT AT UVA

Lead Author: Andrew R. Alkis, M.D.
Co-Author(s): Nassima Ait-Daoud, M.D., David V. Hamilton, M.D.

SUMMARY:
Currently, little is known about the feasibility or acceptability of implementing screening, brief intervention and referral to treatment (SBIRT) on an inpatient unit at the University of Virginia. The purpose of this study is to assess the feasibility and acceptability of performing SBIRT on a general medicine unit at the University of Virginia. In terms of feasibility, the specific aim is to assess if physicians on the general medicine service are amenable to referring their patients with alcohol use disorder for an SBIRT encounter. In terms of acceptability, we plan to assess if patients are receptive to the encounter and find it beneficial. Lastly, we are investigating common psychosocial factors that may affect the feasibility and acceptability of performing the encounter (SBIRT). We hypothesized that physicians on the general medicine service will refer their patients for SBIRT if such a service was readily available. We also hypothesized that patients will be receptive to such an encounter and find it beneficial; however, patients with poor insight into their alcohol use disorder, a diagnosed personality disorder or poor social support will not find the encounter beneficial. The study is being conducted by performing screening (using the AUDIT), brief intervention (utilizing motivational interviewing) and referral to treatment in the community during a one-time encounter to patients referred by general medicine

physicians or unit social workers. Psychosocial factors, past psychiatric history and insight into alcohol use disorder are briefly assessed during the encounter. Following the encounter, patients are surveyed as to whether or not they found the encounter beneficial. The University of Virginia Clinical Data Repository is being accessed to determine the total number of patients admitted to general medicine during the time of the study in order to determine how many patients with an alcohol use disorder are being referred. We are also comparing the number of patients referred by general medicine physicians to the number of patients referred by unit social workers caring for patients on the general medicine service. General medicine physicians referring patients are being categorized into those with poor involvement (<25% referred), moderate involvement (≥25% but <50% referred), good involvement (≥50% but <75% referred) or excellent involvement (≥75% referred). Patients receptive to participation (as evidenced by how many patients sign the consent form to participate) are being categorized into those with poor receptiveness (<25%), moderate receptiveness (≥25% but <50%), good receptiveness (≥50% but <75%) and excellent receptiveness (≥75%). Patients finding the encounter beneficial are being categorized into low benefit (<25%), moderate benefit (≥25% but <50%), high benefit (≥50% but <75%) or extremely high benefit (≥75%).

NO. 26

SPECIAL-"T" TRAINING: PRE-, POST- AND 90-DAY OUTCOMES FROM A RESIDENCY-WIDE PROFESSIONALISM WORKSHOP ON TRANSGENDER HEALTH

Lead Author: Jeremy D. Kidd, M.D., M.P.H.
Co-Author(s): Walter Bockting, Ph.D., Deborah L. Cabaniss, M.D., Philip Blumenshine, M.D., M.A.S.

SUMMARY:

Objective: Transgender people are at risk for negative health outcomes and often face significant barriers to accessing health care. Given that most training programs spend little time preparing residents for clinical encounters with this stigmatized minority group, we sought to develop and evaluate an educational intervention to enhance residents' ability to empathize and work professionally with transgender patients. **Methods:** This study utilized evaluation data from a 90-minute professionalism workshop developed by and for psychiatry residents at Columbia University. The workshop consisted of a brief didactic presentation followed by role-play of physician-patient encounters using clinical vignettes. Matched pre- and postsurveys were administered to all attendees, followed by an unmatched 90-day follow-up survey. In addition to basic demographics (i.e., year of training and past clinical exposure), respondents were asked to subjectively rank their perceived competency in five domains: 1) empathy, 2) knowledge, 3) comfort, 4) interview skill and 5) motivation for future learning. Fischer's exact tests were used for categorical variables, and t-tests were used for continuous variables, utilizing paired t-tests for comparisons of matched pre- and postdata. **Results:** Twenty-two residents completed both pre- and postsurveys, representing a 64.7% response rate. The majority (77.3%) were PGY2 and PGY3 residents. Twenty original respondents (90.9%) completed the 90-day follow-up survey. Half of residents had had only one transgender patient in the last four years, and none had had more than five. Compared to preworkshop baseline, there were statistically significant ($p<0.05$) postworkshop increases in the percentage of respondents who agreed/strongly agreed with statements about perceived empathy (36% vs. 73%), knowledge (5% vs. 55%), comfort (36% vs. 73%) and motivation for future learning (36% vs. 73%). There was no significant change in interview skills. When preworkshop data were compared to unmatched 90-day follow-up results, there were no statistically significant differences across any of the five domains. Looking at the data continuously rather than categorically, there was a modest but statistically significant increase in perceived knowledge at 90-day follow-up compared to the presurvey baseline (mean score 2.4 vs. 3.0, $p=0.009$). **Conclusion:** While residents showed significant improvement immediately postworkshop in perceived professionalism and cultural competency measures in relation to transgender patients, these gains did not persist. These findings call into question the effectiveness of so-called "one-shot" educational interventions. Future research is needed to examine whether recurrent educational programming yields more sustainable changes in residents' ability to empathize and professionally treat this stigmatized minority population.

NO. 27

DISSEMINATION OF AN EVIDENCE-BASED TOBACCO TREATMENT CURRICULUM TO PSYCHIATRY RESIDENCY PROGRAMS

Lead Author: Smita Das, M.D., Ph.D.
Co-Author(s): Sebastien Fromont, M.D., Karen Suchanek Hudmon, Dr.P.H., Alan K. Louie, M.D., Judith J. Prochaska, Ph.D., M.P.H.

SUMMARY:
Objective: People with psychiatric and addictive disorders have the highest rates of tobacco use and related morbidity/mortality; treatment of tobacco in psychiatric/addiction settings is often avoided and has been historically discouraged. Psychiatric residency is an opportune setting to provide training and potentially increase treatment. This study focuses on the dissemination of "Psychiatry Rx for Change," a four-hour curriculum developed for psychiatric residency programs and focused on identifying and treating tobacco dependence among individuals with mental illness. Methods: The four-hour curriculum (evidence-based, patient-oriented cessation treatments relevant for all tobacco users, including those not yet ready to quit) was previously tested in a pilot study. It was disseminated within eight training programs across four western states. Surveys to assess knowledge, attitudes and practice habits were administered before, after and six months post-training. Website usage was also assessed. Results: 119 valid surveys at baseline with 72 postsurveys were collected (44% PGY3, 56% female, 53% Caucasian and 38% never tried tobacco). Residents attended an average of 3.2 hours (SD=1.0) of the four-hour curriculum. The curriculum was associated with significant improvements in psychiatric residents' knowledge and confidence for treating tobacco use among their patients, regardless of program site; resident smoking status, level or interest; or PGY level. There were also significant improvements in attitudes about barriers (with program and training year effects). Over 90% of participants recommended the training to other programs and stated it would increase the number of patients they counsel and improve the quality of their tobacco counseling; 77% rated the training to be as good as or better than other didactics in their program. The online "Psychiatry Rx for Change" curriculum has been accessed by >3,400 registrants, with >13,000 file downloads (most accessed are the medication guide, followed by epidemiology slides, counseling guide, treatment slides and medication interaction guide). **Conclusion:** Dissemination of the evidence-based "Psychiatry Rx for Change" residency curriculum positively impacted knowledge and confidence across training sites and training year, regardless of smoking status and interest in the curriculum. This model standalone tobacco treatment curriculum can be implemented in psychiatric residency training programs and disseminated widely, thereby effectively reaching the most disproportionately affected and often ignored population of smokers.

NO. 28

GUIDELINES FOR DISCONTINUING BENZODIAZEPINES IN PATIENTS WHO ARE CHRONIC USERS

Lead Author: Joseph Siragusa, M.D.
Co-Author(s): Vandana Doda, M.D., Asghar Hossain, M.D.

SUMMARY:
Background: In 1977, benzodiazepines were the most commonly prescribed medicines in the world. Indeed, benzodiazepines have been an effective staple in the management of anxiety and insomnia. However, benzodiazepines have high addictive potential and are often prescribed for periods of time significantly longer than clinically warranted. In addition, it is concerning that they are increasingly being prescribed by nonpsychiatrists. Each year, a substantial number of patients become iatrogenically dependent on this class of sedative-hypnotics. Although there has been some research and literature regarding recommendations for how to safely detoxify patients from benzodiazepines, specific guidelines and a general consensus have yet to be established. Given accumulating evidence and concerns regarding the adverse effects of long-term benzodiazepine use, a standardized approach to discontinuation will be useful in mitigating these effects. **Objective:** To develop a user-friendly flowchart for outpatient detoxification of patients with chronic benzodiazepine use. **Methods:** Using various search engines such as PubMed, we searched for articles using keywords "benzodiazepine withdrawal" and "benzodiazepine dependence." By reviewing and studying each article, we identifed effective interventions and commonalities that led to a proposal of a general consensus regarding management of outpatient benzodiazepine discontinuation. **Results:** There are many treatment strategies available for benzodiazepine discontinuation, and many trials have been conducted on how to safely and effectively taper patients. Treatment strategies range from minimal intervention, in which information is provided in the form of a letter or single consultation, to supervised gradual

withdrawal, where the drug is discontinued gradually with the substitution of a long-acting benzodiazepine such as diazepam augmented with psychotherapy. Different types of psychotherapies such as CBT, behavioral therapy or psychological consultation have been used in various clinical trials. Various pharmacotherapies such as beta-blockers, sedative antidepressants, anticonvulsants and antihistamines can also be used to manage benzodiazepine withdrawal. **Conclusion:** In general, physicians should avoid prescribing benzodiazepines for longer than two to four weeks in order to prevent iatrogenic dependence. Physicians are advised to prescribe benzodiazepines in nonexcessive quantities, using the smallest doses that will yield the desired effect. Particularly in treating insomnia, benzodiazepines should not be the first-line treatment. Educating patients about dependence and side effects is paramount. Patients should be evaluated for alcohol and substance abuse and monitored closely over the course of treatment with benzodiazepines. Should a patient either develop benzodiazepine dependence during treatment or present with dependence, physicians should use the stepwise approach outlined in this poster.

NO. 29

UNDERSTANDING THE ROLE OF MORBIDITY AND MORTALITY ROUNDS IN PSYCHIATRY: A SYSTEMATIC REVIEW OF IMPLEMENTATION AND EDUCATIONAL OUTCOMES

Lead Author: Paul V. Benassi, M.D.
Co-Author(s): Dr. Lindsey MacGillivray, Dr. Ivan Silver, Dr. Sanjeev Sockalingam

SUMMARY:

Background: Morbidity and Mortality Rounds (MMR) is a tool used in health care to learn from medical errors and improve patient safety. This review describes how MMR are being designed and implemented across institutions and what evidence exists of their educational outcomes. **Methods:** We performed a literature search of studies using MEDLINE, PubMed, PsychInfo and Cochrane Review up to August 2015. We included all English language studies reporting on MMR design and implementation within a department or institution. Elements of MMR were analyzed and categorized based on established design elements. To evaluate educational outcomes, we classified studies based on Donald Moore's Continuing Medical Education Framework. **Results:** We Included 68 studies describing the implementation and delivery of MMR. There was significant heterogeneity involving the elements of MMR design, which included objectives and goals, data collection, process and format, and case analysis. There was a lack of educational evaluations within studies, with those that reported outcomes being limited to domains of participation, satisfaction, and, to a lesser degree, learning and performance. MMR models that had higher-level educational outcomes were associated with structured formats with systematic case analyses and mechanisms to translate and act on findings. **Conclusion:** There is significant heterogeneity involving the delivery and implementation of MMR among institutions, yet there are common shared design elements. Further evaluation is needed to measure and improve the educational outcomes of MMR, with a greater focus on developing quality improvement skills and patient health outcomes.

NO. 30

ARE MEDICAL DOCTORS EDUCATED RESEARCH CONSUMERS?

Lead Author: Priscilla N. Chukwueke, M.D., M.P.H.
Co-Author(s): E. Akerele

SUMMARY:

Background: Statistical literacy is defined as basic competency in understanding health statistics. The purpose of this study is to objectively explore statistical competence of medical doctors and outline the recommended approaches from the reviewed documents, including ways to improve research and statistical literacy amongst medical doctors. **Methods:** PubMed was searched for related peer-reviewed literature published between 2006 and 2014 and a book review. **Results:** The literature review showed that the majority of medical doctors are statistically illiterate and do not receive adequate statistical expertise while in training. **Discussion:** Evidenced-based medicine is the way to go in this technological age when patients go online and educate themselves before coming to see the doctor, and if the doctor cannot answer the patients' questions about efficacy of treatment or risk factors based on appropriate interpretation of research or statistical data, it becomes a case of "blind leading the blind." Also, there will be missed opportunities for effective risk communication and misguided critical decision making, the consequences of which may sometimes be dire.

NO. 31

A CALL FOR THE INCREASE IN CLOZAPINE CLINICS TO IMPROVE THE TREATMENT OF SCHIZOPHRENIA

Lead Author: Balwinder Singh, M.D., M.S.
Co-Author(s): Andrew Hughes, B.S.

SUMMARY:

As psychiatrists continue to struggle with the safe and effective treatment of schizophrenia, clozapine continues to be drastically underutilized. Although clozapine has proven to be highly efficacious (especially in the setting of treatment-resistant schizophrenia), its use has steadily declined in the U.S., from 11% of all second-generation antipsychotics prescribed in 1999 to less than 5% in 2002. This significant decrease seems contradictory to consistent evidence showing superior efficacy, improved outcomes and decreased morbidity when compared to other antipsychotics. Despite current guidelines suggesting clozapine therapy in treatment resistant-schizophrenia, studies show that only small portions of patients are being treated as such, and many physicians instead turn to combinations of other antipsychotics. Unfortunately, when compared to clozapine monotherapy, such antipsychotic polypharmacy has been associated with increased disease-related emergency department visits as well as significantly increased health care costs. Investigation into clinicians' reluctance to prescribe clozapine has suggested the following sources: concern regarding side effects and comorbidities (e.g., agranulocytosis, myocarditis, cardiomyopathy, seizures, weight gain, hyperlipidemia and increased diabetes risk), increased frequency of clinic visits, and reluctance to enter patients into weekly blood monitoring for agranulocytosis. This requirement for weekly blood draws can be especially deterring, as patients with schizophrenia have an inherent tendency toward poor adherence. Some of these fears could be unfounded, as studies have shown clozapine actually reduces mortality, possibly secondary to reducing the risk of suicide. If used effectively, the potential decrease in suicide among patients with schizophrenia treated with clozapine is estimated to be as high as 85%. Treatment with clozapine is cost-effective, and the significant decrease in suicide risk far outweighs the low risk of mortality from agranulocytosis. In fact, a recent study has proposed an association between clozapine and reduced risk of mortality from natural causes. This poster presentation will argue that the above difficulties in schizophrenia management could be addressed with clozapine clinics. Such clinics could expand accessibility, enhance clinician familiarity and competency, and provide better residency training for more effective use among desired communities. These benefits could improve patients' quality of life while playing an important role in the treatment of schizophrenia. Finally, clozapine clinics provide the opportunity for focused, supplementary training for psychiatric residents and other medical professionals to become more comfortable and experienced with clozapine prescription in a controlled environment before continuing on to individual practices.

NO. 32

ASSISTED DEATH FROM A PSYCHIATRIC PERSPECTIVE: AN OVERVIEW AND REVIEW OF LITERATURE

Lead Author: Tanuja Gandhi, M.D.
Co-Author(s): Dr. Kevin Hails, Dr. Cedrick Barrow

SUMMARY:

Background: The role of a psychiatrist in ensuring the preservation of life often encompasses evaluation of terminally ill patients and end of life discussions. However, the role of the psychiatrist in "physician-assisted suicide" creates a moral dilemma raising several ethico-legal questions. Physician-assisted suicide has become an increasingly provocative and debated topic in recent times. As controversial as the topic itself, the legal applicability and the evaluation protocols involved vary in their requirement of a psychiatric assessment as a part of the evaluation. Currently, physician-assisted suicide is legal in Washington, Vermont, Montana and Oregon, with a move toward legalization in California as well. Internationally, seeking physician assistance with dying is legal in the Netherlands, Luxembourg and Belgium, with its applicability extending to children with terminal illness in Belgium. **Methods:** We performed a review of the literature using keywords "physician assisted death," "physician aid with dying" and "physician assisted suicide" on PubMed, Google scholar and Cochrane database. **Discussion:** Literature indicates that though neuropsychiatric conditions and an "unbearable" degree of suffering are factors that weigh in during an evaluation for physician assistance with dying, an assessment of decisional capacity by a psychiatrist is not an absolute requirement in any country or state where physician-assisted suicide is legal. However, while there is the argument about mandatory psychiatric assessments, this raises interesting ethico-legal questions around psychiatric involvement. Literature

indicates that there are concerns about protecting vulnerable populations, including psychiatric patients, and possible "safeguards" to prevent abuse of this option. Thus, considering the significance and impact of this issue, we present an overview of physician-assisted suicide with pertinent review of literature. **Conclusion:** The role of physicians, in particular psychiatrists, in assistance with dying remains a controversial question. Nevertheless, as individuals who influence not just patient care but patient decisions as well, it is imperative for physicians to be adequately informed about this topic. We believe that through this presentation, physicians will develop a comprehensive understanding of physician-assisted dying and its potential influence with vulnerable populations, particularly psychiatric patients.

NO. 33

DIFFICULT INTERACTIONS: A REASON FOR INPATIENT PSYCHIATRIC CONSULTATION?

Lead Author: Meena Kumari, M.D.
Co-Author(s): Jordan Howard, Victor Ede, Ana Cuebas, Ann Schwartz, John Gaston, Glenda Wrenn

SUMMARY:

Background: There is a high concurrence of medical and psychiatric diagnoses in the general hospital population that requires collaboration between the two fields. When primary medical teams have questions regarding the management of patients with known or suspected psychiatric illnesses, they often recruit the psychiatric consult liaison service at their hospital. Often, these requests for consultation do not reveal acute psychiatric illnesses, rather an unpleasant interaction between a patient and their medical team. Studies have shown that primary teams place vague or unclear psychiatric consults when they have difficulty in their interactions with patients. Hengeveld et al. established in their series that 17% of unclear consultation requests were associated with situations in which there was a patient-staff or intrastaff conflict. The purpose of this study is to highlight the patterns of difficult patient encounter consults and length of hospital stay, using the data appropriately to educate and train medical teams with skills that can be utilized to address these patients prior to psychiatric consultation. **Methods:** We reviewed 184 psychiatric consults placed during the period of January – February, 2014 from the electronic medical records of a large, urban, public hospital in Georgia. Specifically, the charts were reviewed for patient demographic characteristics (race, gender, education, employment status, health insurance status, housing situation and ethnicity), as well as factors identified by a preliminary query of key informants as potential covariates. This includes discipline of the consulting team, reason for medical admission, readmission status, medical diagnosis, psychiatric diagnosis and length of stay. Independent reviewers examined the narrative of the medical records to categorize difficult interaction status (yes/no). **Results:** In the retrospective study data, there were no significant associations between patient demographic characteristics, consult team, reason for admission, medical diagnosis, treatment modality, length of stay and difficult interaction status. However, our regression model indicated that patients with difficult encounters were significantly more likely to be readmitted than those without difficult encounters (OR=5.1, CI=1.8 – 13.8, P=0.0014). Patients with adverse housing situations were also significantly associated with prolonged hospital stay (P=0.04). **Conclusion:** More studies (qualitative) to better understand various characteristics of patient and physician archetypes and how they result in complex physician-patient interactions are needed. The results also highlight the importance of addressing housing situations among patients with difficult encounters and the potential economic implications to both the hospital visit and overall patient well-being.

NO. 34

SELF-INJURIOUS BEHAVIOR IN PATIENTS WITH EATING DISORDERS: A LITERATURE REVIEW

Lead Author: M. Rehan Puri, M.D., M.P.H.
Co-Author(s): Lara Addesso, M.D.

SUMMARY:

Background: Adult patients diagnosed with eating disorders are more prone to self-injurious behavior, according to multiple studies. Few studies have investigated the association of self-harm and eating disorders in adolescents, but one study implies adolescents who engage in self-harm behaviors are more prone to eating pathologies than adolescents who do not self-harm. Previous research has demonstrated that patients with a history of traumatic life events are more prone to develop self-harm behaviors and eating disorders. Also, eating disorders and self-mutilation possess similar psychopathological factors: impulsivity, obsessive-compulsive behavior, etc. **Objective:** In this review, the authors assess the association of self-mutilation

and eating disorders in regards to similar risk factors, occurrence throughout the lifespan, and possible risk of suicide in the future. The authors also review what categories of eating disorders correlate with self-injurious behavior, along with specific methods of self-harm and intention. **Conclusion:** Certain patients are at higher risk of developing eating disorders and self-harm behaviors. It appears that patients who experience trauma (especially sexual and/or physical) are more prone to develop eating disorders and self-injurious behaviors. The presence of cognitive impulsivity, dissociation and obsessive-compulsive behavior also corresponds to coexisting self-harm and eating disorders. Finally, patients with a history of parasuicidal behavior had higher rates of eating disorders with binge/purge symptoms, multiple purging methods, and other significant psychiatric diagnoses. These studies demonstrate the necessity for further investigation of self-harm and eating disorder correlation and intensified screening to better treat these disorders and possibly decrease the suicide rate.

NO. 35

TRAINING AND ASSESSMENT OF PSYCHIATRY RESIDENTS' DE-ESCALATION COMPETENCY IN STANDARDIZED PATIENTS

Lead Author: Jenine Weber, D.O.
Co-Author(s): Consuelo C. Cagande, M.D.

SUMMARY:
Patient safety has recently been a major focus for the Accreditation Council for Graduate Medical Education (ACGME) and residency training programs. Psychiatrists are usually some of the first to be called upon to assess and manage violent and aggressive patients. The Psychiatry ACGME Residency Review Committee requires residents to be competent in assessing and managing this high-risk population (ACGME Psychiatry RRC 2007.) Aggressive patients often target psychiatrists and psychiatric residents with significant reported morbidity and even mortality. In a survey of psychiatric residents throughout the country, our study found that most residents feel they are insufficiently trained in violence risk assessment and management. Goals of the study are for residents to 1) Assess resident competency in managing aggressive patients; 2) Identify and improve shortcomings in any particular skill area; 3) Improve upon communication and de-escalation styles regarding the agitated patient; and 4) Utilize data to improve on a team approach in management of the agitated patient. A training seminar will utilize standardized patients to identify lead-ups to a crisis, responses to each crisis scenario, and utilization of verbal and nonverbal techniques to defuse hostile behaviors and scenarios before leading to violent incidents. In addition, coping and decision making training will be addressed via surveys given after the initial standardized patient encounter.

NO. 36

PATIENT-TARGETED GOOGLING AND PSYCHIATRIC PROFESSIONALS

Lead Author: Liliya Gershengoren, M.D., M.P.H.

SUMMARY:
Patient-targeted googling is a term used to describe a phenomenon where physicians use Internet resources, such as the popular search engine "Google," to obtain patient information. This is a pilot study that assessed the beliefs of psychiatric professionals regarding obtaining patient information via the Internet, specifically by "googling" their patients as well as the frequency with which they do it in a variety of clinical settings. Of the 118 full time senior faculty and 44 residents in the psychiatric department in an inner-city hospital who were surveyed, 48 faculty and 34 residents participated. The majority of attendings and residents reported engaging in patient-targeted googling with no significant difference between the groups. However, most respondents did not report regular involvement with this activity. Residents are most likely to google a patient frequently or more often in the psychiatric emergency room (40.6%), while for attendings, psychiatric emergency room, followed by private practice, are the most notable clinic settings (17.5% and 15%, respectively). When describing reasons for engaging in patient-targeted googling in the psychiatric emergency room, "patient care" is cited about twice as often as "curiosity," whereas "curiosity" and "patient care" post much closer numbers in other clinical settings. In general, neither attendings nor residents are informing their patients of their "googling" activities either before or after engaging in patient-targeted googling. Ethical considerations and the need for further medical professionalism guidelines in the digital environment are discussed.

NO. 37

THE EFFICACY OF COMPLEMENTARY AND ALTERNATIVE THERAPIES TO TREAT DEPRESSION DURING PREGNANCY: A META-ANALYSIS

Lead Author: Alexandra K. Rice, M.D., M.A.
Co-Author(s): Mawuena Agbonyitor, M.D., M.Sc., Kristen Gialo, D.O.

SUMMARY:
Background: Depression in pregnant women can be challenging to treat due to the hesitation of women to take medications out of concern for the fetus. Therefore, many providers desire to have nonpharmacological options to offer as treatment for pregnant depressed women. **Objective:** This meta-analysis aims to assess the improvement of depressive symptoms in pregnant women with Major Depressive Disorder using CAM (complementary alternative medicine) techniques. **Methods:** Data Sources: Electronic Databases (PsychInfo, PubMed, Cochrane Library) were searched September 16, 2014 for randomized controlled trials that were written in English. Search terms included pregnant, yoga, mindfulness, acupuncture, tai/chi, massage, meditation, CAM, major depressive disorder, depression and postpartum depression. Study Selection: Eligibility criteria for studies included those whose participants were pregnant, depressed or adult females. Participants only received CAM interventions in outpatient settings, and a depression rating scale was used as a measure of depressive symptoms. Initial searches yielded 330 studies that were then pooled, duplicates were removed, and the remaining titles were independently reviewed by two authors. Two hundred and ninety-seven studies were excluded with good agreement, leaving 6 studies that were included in analysis. Data Extraction: Study quality was assessed independently by two authors using the Cochrane approach. Outcome data of last day depression scale scores were extracted independently by two authors. **Results:** Meta-analysis of 6 studies evaluated the efficacy of complementary and alternative medicine interventions amongst prenatally depressed pregnant women, and it showed a statistically significant effect (p=0.025) in reducing depression with a small effect size (SMD=0.242 [95% CI=0.030, 0.453]). The estimate of study variance showed low heterogeneity, and there was low publication bias. **Conclusion:** The use of complementary alternative medicine (yoga, massage, acupuncture) resulted in a statistically significant reduction in depressive symptoms in pregnant women with a *DSM-IV* diagnosis of Major Depressive Disorder.

NO. 38

SEXUAL OFFENDERS WITH SUBSTANCE USAGE: DO PSYCHIATRIC COMORBIDITIES DIFFER IN THIS POPULATION?

Lead Author: Edward Thomas Lewis III, M.D.
Co-Author(s): R. Gregg Dwyer, M.D., Ed.D., Robert Moran, Ph.D.

SUMMARY:
Sexual offending is a significant public health and societal concern. According to the United States Department of Justice (USDOJ), in 2012, there were 346,830 rapes and sexual assaults, to include verbal threats in each. While data collected through DOJ provides insight, it likely represents considerable under-reporting of actual rates of sexual assaults. Mental health sequelae of sexual assault victims are wide ranging and severe; victims are three times more likely to suffer from depression, 6 times more likely to suffer from posttraumatic stress disorder, 13 times more likely to abuse alcohol, 26 times more likely to abuse drugs, and four times more likely to contemplate suicide (RAINN, 2014). In order to address these severe consequences, a better understanding of sexual offenders is needed from a prevention and treatment standpoint. Building evidence among the literature reveals a high prevalence of substance use disorders among sexual offenders, a psychiatric comorbidity requiring further exploration. A number of studies have also confirmed that a history of abusing substances increases the recidivism rate among sexual offenders. In Abracen et al., sex offenders with a history of alcohol abuse who completed both substance usage treatment and sex offender treatment exhibited lower recidivism rates than those who only completed sexual offender treatment. In South Carolina, civil commitment laws exist for persons convicted of sex offenses after criminal incarceration. These individuals are identified as Sexually Violent Predators (SVPs). South Carolina defines an SVP as someone who has been convicted of a sexually violent offense and has a "mental abnormality or personality disorder" that makes him/her "likely to engage in acts of sexual violence if not confined to a secure facility for long-term control, care and treatment.". The first step in South Carolina's process for persons identified under the SVP act is a review of the case by the SVP Act Multidisciplinary Team (MDT), which can ultimately result in civil commitment. The purpose of our current investigation is to further distinguish SVPs with comorbid substance use from other SVPs in order to identify offender characteristics including

comorbid psychiatric illness and psychiatric treatment. We will compare sex offenders with and without concomitant substance usage to determine if other psychiatric comorbidities differ between these two groups. Data will be collected from the SC-SVP research database, a de-identified dataset containing an in-depth review including perpetrator characteristics, criminal history and victim profiles for over 1,000 individuals. A better understanding of psychiatric profiles of SVPs with substance usage can potentially impact treatment planning and legislative policy for sexual offenders.

NO. 39

CORRELATES OF 1-YEAR PROSPECTIVE DEPRESSION SEVERITY IN BIPOLAR DISORDER: RESULTS FROM THE SYSTEMIC TREATMENT ENHANCEMENT PROGRAM FOR BIPOLAR DISORDER

Lead Author: Sharif Syed
Co-Author(s): David A. Luckenbaugh, Carlos A. Zarate, Jr.

SUMMARY:

Objective: To replicate the correlates of depression severity in bipolar patients found in the Stanley Foundation Bipolar Network one year after study entry using data form the multi-center Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) study. **Methods:** Prospective data from 1,453 patients meeting *DSM-IV* criteria for bipolar disorder participating in the STEP-BD study was examined for up to 12 months. During this period, the depressed mood severity level from the clinical monitoring form was used as the primary outcome. Demographic information was collected using the affective disorder evaluation form and the demographic form. Potential risk factors were assessed upon study entry and univariate linear regression was used to determine the correlates of depression severity at one year. **Results:** Increased number of lifetime depressive episodes (r=0.09, p=0.001), number manic episodes (r=0.06, p=0.03), occupational dysfunction (r=0.06, p=0.03), and higher depression severity at time of entry (r=0.14, p<0.001) were associated with higher severity depression after one year of study. Multivariate demonstrated number of depressive episodes and depression severity at entry as significant. **Conclusion:** The patient cohort enrolled in the STEP-BD study confirmed correlates previously found, however with a reduced Pearson coefficient. This may suggest that demographic factors such as occupational dysfunction, education and mood severity are factors that may influence the prognosis of depression and help set goals upon which to tailor individual patient treatment.

NO. 40

PREVALENCE AND CORRELATES OF PSEUDOBULBAR AFFECT SYMPTOMS IN URBAN SETTING NURSING HOME RESIDENTS WITH DEMENTIA

Lead Author: Milania Dela Cruz, M.D., M.P.H.
Co-Author(s): I. Predescu, M.D., C. Wu, M.D., Ph.D., R. Mian, M.D., S. Carlson, M.D., L. Belzie, M.D., M.P.H.

SUMMARY:

Pseudobulbar affect (PBA), also known as emotional lability, refers to sudden outbursts of involuntary crying or laughing in patients with neurological disorders, in the absence of any sad or humorous event to trigger those emotional episodes. PBA may be present in a variety of neurological disorders, including Parkinson's disease (PD), Alzheimer's disease (AD), stroke and multiple sclerosis. However, the symptoms of PBA may be confused with psychiatric illnesses such as depression and post-traumatic stress disorder (PTSD). In fact, depression is one of the most common emotional changes in patients with neurodegenerative disease or poststroke sequela. As a result, it is often comorbid with PBA. The primary aim of the study is to ascertain the prevalence of PBA in patients diagnosed with different types of dementia, including PD, AD, HIV and vascular using the Center for Neurologic Study-Lability Scale (CNS-LS) in the Shulman and Schacne Nursing Home of Brookdale Hospital in Brooklyn, NY. The secondary aim is to assess the PBA comorbidity with depression Geriatric Depression Scale – Short Form (GDS-SF). Lastly, the prevalence of PBA will be compared in different types of present neurocognitive disorders and to determine what psychotropics the patient is currently being prescribed. We hypothesize that the prevalence of PBA in the patients with dementia will be 30%, similar to the previous studies. The patients will likely be on multiple psychotropics, and comorbid depression will be high. Depression associated with HIV-dementia showed a prevalence of 20% – 40%, and since PBA could co-occur with depression, we therefore hypothesize that approximately 20% of patients who have HIV-Dementia at the SSNH could be positive for PBA symptoms. The projected date of the study is October 2015 – April 2016. We will screen 80 residents in the nursing home units using inclusion

and exclusion criteria. The mini-mental status exam (MMSE) will be administered to patients who meet the criteria. Informed consent will be obtained from patients with MMSE score of ≥20. For patients with a score of ≤20, informed consent will be obtained from their surrogate. Patients who are included in the study will be evaluated for depression using the GDS-SF and the CNS-LS for PBA symptoms. The data collection form will be used to collect data and will be placed in a password-protected Excel spreadsheet. Descriptive analysis of the collected data will be conducted using a population sample. The prevalence of PBA and its correlates will be statistically analyzed. The individuals who are found to have CNS-LS ≥13 are considered positive for PBA. They will be informed of the outcome of the screening test, and the primary health care provider will be informed for further evaluation. Limitations and conclusion will be discussed once preliminary results are available.

NO. 41

INPATIENT BURDEN OF ALCOHOL WITHDRAWAL (DELIRIUM TREMENS) IN THE UNITED STATES: AN ANALYSIS OF NATIONAL TRENDS

Lead Author: Raghu Gandhi, M.D., M.B.B.S.
Co-Author(s): Dr. John Kuzma, Dr. Sugandha Bhosrekar, Dr. Amit Jagtiani, Dr. Aastha Chauhan

SUMMARY:

Background: Approximately 1.5 to 2 million Americans seek treatment for alcohol dependence every year. As many as 71% of these patients manifest symptoms of alcohol withdrawal with delirium tremens; the most severe form may occur in 5%. Delirium tremens is a medical emergency that needs inpatient admission with mortality rates that vary from 15% to 23%. The aim of this study was to use a national database of U.S. hospitals to evaluate the incidence and costs of hospital admission associated with delirium tremens. **Methods:** We analyzed the National Inpatient Sample Database (NIS) for all subjects in which delirium tremens 291.0 (CCS code) was the principal discharge diagnosis during the period from 1993 to 2012. The NIS is the largest publicly available all-payer inpatient care database in the United States. It contains data from approximately eight million hospital stays each year. The statistical significance of the difference in the number of hospital discharges, length of stay and hospital costs over the study period was determined by utilization of the chi square test for trends. **Results:** In 1993, there were 18,262 admissions with a principal discharge diagnosis of delirium tremens as compared to 34,130 in 2012 ($p<0.001$). The rate of discharge per 100,000 persons increased from 7 (+0.5) to 10.9 (+0.3) ($p<0.001$). The mean length of stay for delirium tremens was 5.7 days in 1997 and 5.8 days in 2012 ($p=0.57$ NS). However, during this period, the mean hospital charges increased by 395.5% from $7,097 per patient in 1993 to $35,171 per patient in 2012 ($p<0.001$). The in-hospital mortality rate also decreased from 0.73% in 1993 to 0.4% in 2012 ($p=0.06$ NS). **Discussion:** The number of inpatient admissions and rate of discharge for delirium tremens has significantly increased over the last 19 years. The cost associated with these admissions has increased significantly. However, there is no significant change in the inpatient mortality rates.

NO. 42

THE RIGHT TO KEEP AND BEAR ARMS WHEN MENTALLY ILL

Lead Author: Furqan Nusair, M.B.B.S.

SUMMARY:

Whether the second amendment affords persons with mental illness the right to keep and bear arms is not often addressed. Mass shootings and the pervasiveness of gun violence in the U.S. have not resulted in comprehensive gun control legislation but have provided the federal government with reason to restrict firearm access to persons with mental illness, amongst others. States have also enacted legislation that aims to address this problem using various approaches, some further restricting the constitutional rights of persons with mental illness. The rationale of restricting gun rights to persons who are mentally ill is discussed with an examination of the evidence supporting the presumption of dangerousness of such persons. Federal and state laws are reviewed along with relevant court rulings. The effectiveness of such legislative measures is appraised. Policy recommendations based on proven international experience are suggested to safeguard the rights of persons with mental illness while decreasing gun violence.

NO. 43

GENDER DIFFERENCES IN THE EXPERIENCE OF DEPRESSION IN PARKINSON'S DISEASE

Lead Author: Andrew Perrin, M.D., Ph.D.
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Valerie O'Neill, R.N., Sharon Yardley, R.N., Skyla Burden, R.N., Martin J. McKeown, M.D., B.Eng., A. Jon Stoessl, M.D., Matthew J. Farrer, Ph.D., Silke Appel-Cresswell, M.D.

SUMMARY:

Background: 30 – 40% of Parkinson's patients experience depression during their illness. Identifying which factors most effectively discriminate depressed from nondepressed patients can facilitate prompt treatment and allow improvements in quality of life. **Methods:** 654 patient records at a tertiary referral center were reviewed for clinical and demographic factors. We used recursive partitioning to determine which items on the Beck Depression Inventory (BDI) were most useful in differentiating patients who scored in the depressed range (≥14) from those who scored in the nondepressed range (≤13) at the first visit only (n=307). **Results:** Females and patients with a younger age at symptom onset were at highest risk of depression. Males and females could be distinguished by their differential profiles in recursive partitioning. Feelings of worthlessness, irritability, agitation, self-punishment, loss of pleasure and self-dislike were most useful for partitioning females while loss of libido, feelings of guilt and loss of interest were most useful in partitioning males. **Conclusion:** Males and females with Parkinson's disease likely experience depression differently. Further studies are required to understand the gender-specific nature of nonmotor symptoms in Parkinson's disease.

NO. 44

SEX DIFFERENCES IN PSYCHIATRY COMORBIDITY PROFILES AMONG ADULTS WITH ADHD AND ALCOHOLISM

Lead Author: Maria M. Reyes, M.D.

Co-Author(s): Terry Schneekloth, M.D., Mario Hitschfeld, M.D., Jennifer Geske, M.S., Victor Karpyak, M.D., Ph.D.

SUMMARY:

Objective: To identify sex differences in demographic and psychiatric comorbidity profiles among treatment-seeking alcoholics with ADHD. **Methods:** We compared demographic and psychiatric profiles of treatment-seeking alcoholics (N=485) according to sex and ADHD status. The Psychiatric Research Interview for Substance and Mental Disorders was used to identify lifetime and current psychiatric comorbidities. **Results:** Compared to male alcoholics without ADHD, male alcoholics with ADHD were younger in age (p=0.001), had significantly higher rates of current cannabis abuse (p=0.046), lifetime cannabis dependence (p=0.023), lifetime and current amphetamine abuse (p=0.003, 0.012), current opioid abuse and dependence (p=0.016, 0.022), current depressive disorders (p=0.039), and lifetime and current anxiety disorders (p=0.002, 0.002). Females with alcoholism and ADHD had significantly higher rates of opioid dependence (p=0.035) when compared with male alcoholics with ADHD. **Conclusion:** A high clinical suspicion for additional psychiatric comorbidity should be maintained in ADHD-positive males seeking treatment for alcoholism.

NO. 45

INTERNAL STATE SCALE (ISS): A PROMISING PATIENT-RATED SCREEN FOR IDENTIFYING BIPOLAR NOS?

Lead Author: Travis Hendryx, M.D.

Co-Author(s): Jigar Chotalia, M.D., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: Bipolar disorder (BD) is frequently complicated by comorbid substance use disorders and differentiating primary from substance-induced mood episodes is difficult. The patient-rated 16-item Internal State Scale (ISS) assesses both manic and depressive symptoms concurrently using four subscales: activation (AC), well-being (WB), perceived conflict (PC) and depression index (DI). The current study examined the potential utility of the ISS in differentiating acute mood state in inpatients with BD-I versus those with mood episodes in the context of acute substance abuse (BD NOS). **Methods:** 79 patients with a primary diagnosis of BD by *DSM-IV-TR* criteria admitted to an academic hospital between July 13 and July 14 completed a diagnostic interview and the ISS. Using *DSM-IV-TR* criteria, the patients were classified into three groups: BD-I Manic (N=33), BD-I Mixed (N=18) and BD NOS (N=27). An analysis of variance was conducted to assess group differences on the four ISS subscales. **Results:** The BP NOS group scored significantly higher than the BD-I Manic and BD-I Mixed groups on the ISS AC (220.37, p=0.017, F=4.324), PC (158.3 p=0.026 F=3.84) and DI (72.7 p=0.0001, F=10.27) subscales. No group differences were detected on the WB subscale. **Conclusion:** The ISS was able to accurately differentiate symptoms between BD NOS vs. BD-I Manic and BD-I Mixed

patients in this preliminary study. If these results are replicated, the ISS may represent a useful tool for rapidly differentiating between mood states in BD-I versus those with BD and acute substance-induced states (BD NOS).

NO. 46

PRN HOSPITALIZATION FOR BORDERLINE PERSONALITY DISORDER: OUR EXPERIENCE AND LITERATURE REVIEW

Lead Author: Lakshit Jain, M.D.
Co-Author(s): Charles Mcglynn, M.D.

SUMMARY:

Background: Besides being one of the more prevalent psychiatric diagnoses, borderline personality disorder is one of the most common disorders seen in inpatient psychiatric settings, and these patients often end up as high utilizers of psychiatric services. With the reduction in availability of inpatient psychiatric beds, the need for a short-term, focused hospitalization for patients with borderline personality disorder has never been so great as now. Here we discuss the approach to inpatient hospitalization for borderline personality disorder being used in our inpatient unit and briefly discuss other approaches recommended in literature. **Methods:** a PubMed search using keywords "short hospitalization" and "borderline personality disorder" was conducted. **Case:** A description of a typical patient's journey from ED/CRC to discharge was done, and special steps taken on our unit were elucidated. **Discussion:** While there is some evidence to suggest a gradual improvement in global functioning over 2 – 6 years, some studies suggest that recovery is difficult to obtain. Poor social adjustment is not only a significant predictor for suicide attempt, but also plays a role in loss of recovery and is often not addressed during inpatient hospitalization. Comorbid Axis I diagnoses, which also increase suicide risk, are adequately addressed during the admission, along with other medical comorbidities. Hospitalization is of unproven value in preventing suicide by these patients and is another risk factor for suicide. By destigmatizing inpatient hospitalization in the eyes of the patient and immediate caregivers, we attempt to provide the patient with a safer environment to deal with ongoing stressors in life with a smoother transition back to ongoing outpatient treatment and therapy. By keeping caregivers in close contact with the treatment team, we attempt to address caregiver fatigue in a more proactive manner. **Conclusion:** From "fickle, egocentric, irresponsible" to a "good prognosis diagnosis," borderline personality disorder is one of the disorders that benefited the most from the advances in biological psychiatry. Brief hospitalization has shown anecdotal benefit in keeping patients involved in treatment in our experience, although the evidence base remains sparse. Establishing more universal guidelines might encourage further research in this field of dire need.

NO. 47

DOES PRESENTING MOOD STATE PREDICT LENGTH OF INPATIENT STAY IN BIPOLAR DISORDER?

Lead Author: Jigar K. Chotalia, M.B.B.S., M.P.H.
Co-Author(s): Yasmine Gharbauoi, M.D., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: The economic costs of bipolar disorder (BD) are mainly associated with hospitalization during acute episodes. The current study examined the potential impact of presenting mood state as a potential factor in predicting subsequent LOS. Mood state was assessed by both a clinical interview and by the patient-rated Internal State Scale (ISS), a 16-item scale with four subscales that has demonstrated the ability to discriminate mood states in BD patients. **Methods:** 107 patients with a primary diagnosis of BD admitted to an academic hospital completed a diagnostic interview using *DSM-IV-TR* criteria and the ISS. Univariate analyses were conducted to understand distribution of variables and identify outliers. Bivariate analyses, including Student's t-test and Pearson's chi-square test, were conducted. Regression analysis (adjusted for age, gender, race, number of admissions, psychosis, substance abuse) was then performed using mood state at admission (depressed vs. manic vs. mixed) based on diagnostic interview and by the ISS, including its subscales. **Results:** The mean LOS for the BD inpatients was 7.7±3.8 days. Mood state as assessed by clinical interview was significantly associated with LOS for mixed (β=2.4, $p<0.005$) and depressed state (β=-2.88, $p<0.05$), but not manic state (β=0.95, P=0.17). In contrast, ISS determined that mood state as well as the presence of comorbid psychotic symptoms or substance abuse did not demonstrate a significant impact on LOS. **Conclusion:** These results suggest that clinician-identified mood state was significantly more effective than patient-rated mood symptoms and/or the presence of comorbid psychotic symptoms or

substance abuse in predicting LOS in BD inpatients. Further studies are needed to identify clinical features associated with an increased risk for extended hospitalization in BD patients.

NO. 48

"SHE'S NOT MY SISTER!" A CASE REPORT OF CAPGRAS SYNDROME IN A PATIENT WITH SCHIZOPHRENIA AND VASCULAR DEMENTIA

Lead Author: Lauren Pengrin, D.O.

SUMMARY:

This case presentation is based on a patient I followed during my consultation liaison rotation. We were initially consulted for medication management/recommendations, but upon attaining a detailed history, I discovered that this patient had quite an interesting clinical picture. Capgras syndrome is a relatively uncommon condition and often points to underlying organic dysfunction. This information enabled us to make more meaningful recommendations and decisions with the medical team regarding the patient's overall health picture. The patient is a 67-year-old single, unemployed African-American female who was admitted to the general medical floor for poorly controlled diabetes. She has a history significant for hypertension, diabetes mellitus and schizophrenia. Psychiatry was consulted to evaluate the patient's psychiatric medications and make recommendations/changes as necessary during her hospitalization. The patient reported feeling "fine" lately. She denied any symptoms of depression, anxiety or mania. She denied auditory or visual hallucinations. When questioned about paranoia, the patient said "only my sister is after me, but she is an imposter anyway." The patient said that she noticed her sister had been replaced by this "double" many months ago and she avoided spending time with her. She denied believing that any other friends or family members were also imposters. The patient has a past psychiatric history of schizophrenia, which developed in her early 20s. She had multiple hospitalizations and has been on many psychotropic medications throughout her life with inconsistent compliance. Currently, she is taking haloperidol 10mg PO at bedtime and has been taking this for the past five years. She reports a history of hypertension and diabetes mellitus, though she admits that she does not take her medications as prescribed. She denied substance use now or ever in the past. The patient denied seizures or traumatic brain injury in the past. On mental status exam, pertinent findings included paranoid delusions regarding her sister and delusions of her sister being replaced with an "imposter look alike." The patient also had some difficulties with memory and attention, and an MMSE score suggested a comorbid diagnosis of dementia. Upon discovering that the patient was suffering from Capgras syndrome, the question was raised if she was also suffering from any organic brain disorders. After discussion with the medical team, brain imaging was ordered, which revealed multiple old cerebral infarcts and severe sclerosis of the vessels. This prompted the medical team to make significant changes to her medications for management of hypertension. The diagnosis of Capgras syndrome also changed the psychiatric treatment plan. The patient was started on clozapine, and the haloperidol was discontinued. The patient's symptoms of psychosis remained very well controlled, and she slowly began to engage with her sister as her treatment continued.

NO. 49

NATIONAL TRENDS, RATES OF CARDIAC CATHETERIZATIONS, REVASCULARIZATION AFTER MYOCARDIAL INFARCTION IN PATIENTS WITH DEMENTIA

Lead Author: Malathi Pilla, M.D.
Co-Author(s): Trinadha Pilla, Steve Scaife, Jeffery I. Bennett

SUMMARY:

Objective: To investigate national trends, cardiac catheterizations, revascularization and inpatient mortality after acute myocardial infarction (AMI) in dementia patients compared to the general population. **Methods:** Nationwide Inpatient Sample database is a stratified inpatient discharge database representing 20% of the hospitals in the United States. Data from 1993 to 2012 was used for this study. Patients with dementia who had AMI were compared to a random sample of all other adults with AMI with no mental illness. Rates of cardiac catheterization, PCI, CABG and inpatient mortality were compared in logistic regression models after adjusting for demographic, medical risk factors, hospital properties and AMI complications. **Results:** From 1993 to 2012, a total of 3,535,653 adult patients were identified who had AMI without any dementia. Patients with Alzheimer's dementia (N=15,926) and vascular dementia (N=12,515) who had AMI were also identified during the same period. There has been approximately a 50% decrease in STEMI and a 5% increase in NSTEMI in

the general population over the last 20 years. The rate of STEMI decreased approximately by 200% in Alzheimer dementia but remained stable with minor fluctuations in the case of vascular dementia. The rate of NSTEMI increased approximately by 200% in vascular dementia but remained stable with minor fluctuations in the case of Alzheimer's dementia. The odds ratio of patients with Alzheimer's dementia to receive catheterization, PCI and CABG, as compared to the general population, was 0.347(0.325 – 0.370), 0.433 (0.398 – 0.471) and 0.252 (0.211 – 0.300), respectively, whereas the same for vascular dementia was 0.240 (0.223 – 0.259), 0.261 (0.235 – 0.290) and 0.214 (0.177 – 0.259), respectively. The odds ratio for inpatient mortality compared to the general population for Alzheimer's dementia was 1.371 (1.296 – 1.449) and for vascular dementia was 1.033 (.996 – 1.105). **Conclusion:** Even after adjusting for potential confounders, there were significant decreases in the rates of catheterizations, PCI and CABG in patients with Alzheimer's and vascular dementia compared to the general population. Alzheimer's and vascular dementia patients with AMI had higher inpatient mortality compared to the general population.

NO. 50

WHOONGA OR NYAOPE: ANTIRETROVIRAL MEDICATION ABUSE: AN EMERGING PROBLEM OR MEDIA HYPE?

Lead Author: Subani Maheshwari, M.D.
Co-Author(s): Vishesh Agarwal, M.D., Kimberly Best, M.D.

SUMMARY:

Background: Diversion and misuse of antiretroviral medication used in treatment of HIV has become a growing concern in recent years. Initial reports emerged in South Africa with use of Whoonga or Nyaope, a locally produced drug cocktail professed to contain an antiretroviral medication, efavirenz. Similar reports have recently come out of South Florida. There is limited scientific literature on the epidemiology, psychoactive effects and abuse potential of antiretroviral medication used in treatment of HIV. Relevance: Psychiatrists should be aware of the abuse potential of antiretroviral medication and educate their HIV patients about the risks involved. **Methods:** We searched for scientific literature on Medline, EBSCO and other standard resources; references were reviewed and relevant titles obtained and reviewed in detail. Information was also obtained and reviewed from online media reports. **Results:** Published scientific reports confirm the psychoactive nature of some ARVs, while some others can potentiate the effect of commonly abused street drugs. Several media reports and qualitative studies mention the recreational use of ARVs for their hallucinogenic properties, hinting towards antiretroviral medications being emerging drugs of abuse. Whoonga, although unconfirmed to contain ARVs, is abused increasingly in South Africa. Media reports continue to claim Whoonga contains heroin, morphine, marijuana, strychnine (rat poison) and the ARV medication efavirenz. **Conclusion:** The diversion and potential for abuse of antiretroviral medication used in treatment of HIV is worrisome at multiple levels. It leads to increased criminal activity, safety concerns for HIV patients and health care professionals, increased cost of antiretroviral treatment (ART), reduced supply of medications for patients, reduced adherence, increased ARV resistance, and poor HIV-related health outcomes. Psychiatrists and other health professionals should pay particular attention to identify and educate at risk patients about the fatal consequences of its use while also looking for suspected use.

NO. 51

PREVALENCE OF COMORBID ANXIETY-ANXIETY DISORDERS AMONG ADULT OUTPATIENTS IN AN ACADEMIC PSYCHIATRIC SETTING

Lead Author: Jessica M. Short, D.O.
Co-Author(s): Samuel R. Weber, M.D., Anne-Marie Duchemin, M.D.

SUMMARY:

The prevalence of anxiety disorder comorbidity with other types of psychiatric diagnoses (e.g., mood disorders, psychotic disorders, substance abuse/dependence disorders) is well characterized; however, comorbidity between anxiety disorders is not well-studied. To determine the frequency of comorbidity between anxiety disorders, we retrospectively analyzed data from psychiatric outpatient visits collected from May 1, 2013 to December 31, 2013 in an academic medical center. De-identified data were obtained from the electronic data warehouse on all adult outpatients with at least one anxiety disorder present in the diagnosis list. Diagnosis of anxiety disorder was based on the *DSM-IV-TR* classification in effect at the time of the data collection. Outpatients with multiple visits were included only once. Data from more than 2,000 patients with at least one anxiety disorder were analyzed. Using *DSM-IV* diagnosis categories, about

78% of patients had only one type of anxiety disorder, about 19% had two anxiety disorders, and about 3% had three or more anxiety disorders. When excluding stress disorders and OCD, the percentage of patients with only one anxiety disorder was 74%. Anxiety comorbidity rate in our sample is in agreement with a small Australian study of 94 patients that found 22% of patients had multiple anxiety disorders. This is lower than the one reported in the Netherlands study of depression and anxiety, which evaluated 1,000 patients, did not include PTSD and OCD, and found only 58.5% of patients had one anxiety disorder diagnosis. Frequency of anxiety-anxiety comorbidity varies by type of anxiety disorder. Using *DSM-IV* anxiety disorders, at least one comorbid anxiety diagnosis was present in 61% of panic disorder, 60% of phobia, 54% of social anxiety disorder (SAD), 46% of PTSD, 44% of OCD, 31% of generalized anxiety disorder (GAD) and 22% of anxiety disorder NOS patients. As expected, when excluding PTSD and OCD, a higher percentage of patients had only one anxiety disorder: more than 80% for anxiety NOS and GAD and about 50% for SAD, panic and phobia. This reflects the relatively high number of patients with PTSD in our sample and the common association of PTSD with other anxiety disorders, especially GAD (24%), anxiety NOS (10%) and panic disorder (10%). Compared to a single anxiety disorder, comorbidity of anxiety disorders does not seem to affect self-report quality of life; however, it seems to be associated with an earlier age of onset and a higher chronicity, and it may be a factor to consider when assessing patients and designing treatment.

NO. 52

SUBSTANCE USE DISORDERS IN PSYCHIATRIC INPATIENTS WITH PRIMARY MOOD OR CHRONIC PSYCHOTIC DISORDERS: PREVALENCE AND RELATIONSHIP TO COMORBID PTSD

Lead Author: Pratikkumar Desai, M.D., M.P.H.
Co-Author(s): Christopher James, M.S., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: Mood and psychotic disorders are often complicated by comorbid substance use disorders. PTSD is associated with increased odds of mood, anxiety and substance abuse disorders. The current study investigated the prevalence of comorbid substance use disorders in inpatients with primary mood or psychotic disorders and the potential relationship between comorbid substance use disorders and comorbid PTSD diagnosis. **Methods:** 115 patients with a primary diagnosis of MDD, bipolar, schizoaffective disorder, or schizophrenia per *DSM-IV-TR* criteria admitted to an acute psychiatric hospital between July and December 2014 completed the PTSD Checklist for *DSM-5* (PCL-5, a standardized 20-item self-report measure designed to screen for PTSD symptoms and a provisional diagnosis of PTSD using cut point score >38). Diagnosis of substance abuse disorder (SUD) was based on *DSM-IV-TR* diagnosis documented in the medical record and results from admission UDS, if available. 102 (89%) patients also completed the National Institute of Drug Abuse (NIDA) Quick Screen, supplemented by the NIDA Modified ASSIST v2.0. A Substance Involvement (SI) Score was calculated from the NIDA data to determine the relative risk level (mild, moderate, or high) for each of 10 substance abuse categories. Chi-square analysis was used to examine the potential relationship between the presence of a PTSD diagnosis and SUD. The potential association between PTSD diagnosis and resultant SI score was also investigated via a chi-square analysis. **Results:** 56% (64/115) of inpatients met criteria for more than one substance use disorder based on *DSM-IV-TR* criteria and/or UDS results, including cannabis (38%), alcohol (22%), cocaine (15%), amphetamine (11%), sedatives/hypnotics/anxiolytics (6%), opioids (4%) and phencyclidine (2%). Patients with comorbid alcohol abuse ($X2=8.95$, $p<0.005$) and patients with at least one SUD diagnosis ($X2=4.53$, $p<0.05$) were more likely to also meet criteria for a comorbid PTSD diagnosis. None of the individual substance abuse categories besides alcohol were significantly associated with comorbid PTSD diagnosis. Using the NIDA, patients endorsed alcohol (47%), cannabis (37%), cocaine (21%), sedatives/hypnotics/anxiolytics (18%), amphetamine (17%), prescription opioids (16%) and street opioid (8%) abuse. Alcohol abuse was again associated with an elevated risk of comorbid PTSD ($X2=4.41$, $p<0.05$), but no other individual illicit or nonmedical drug use or SI-based risk level was associated with comorbid PTSD. **Conclusion:** These results show >50% of psychiatric inpatients with primary mood or psychotic disorders also met criteria for comorbid SUD. The presence of comorbid alcohol abuse and/or comorbid SUD was associated with an increased risk for comorbid PTSD. While preliminary, these results highlight the importance of screening for comorbid substance abuse in psychiatric

inpatients, especially since their presence may also increase the risk for comorbid PTSD.

NO. 53

COMPARING THE EFFICACY, SAFETY AND TOLERABILITY OF ATX VS STIMULANTS FOR ADHD TREATMENT IN CHILDREN and ADOLESCENTS: A SYSTEMATIC REVIEW and META-ANALYSIS

Lead Author: M. M. Naveen, M.D.
Co-Author(s): Thayanne Delima, D.O., Gregory Jasinski, M.D.

SUMMARY:

Background: Pharmacotherapy is an important component of the multimodal treatment of ADHD and, as noted by the CDC, the percentage of children taking medication has increased from 4.8% in 2007 to 6.1% in 2011. AACAP considers stimulants to be first-line treatment for ADHD, but many patients fail to respond or do not tolerate them. atomoxetine was the first nonstimulant the FDA approved for treatment of ADHD and has well-established effectiveness in numerous placebo-controlled trails. However, few studies directly compare it to stimulants. **Objective:** To compare the efficacy, safety and tolerability of atomoxetine to that of stimulants. **Methods:** Electronic databases were searched for RCTs of children and adolescents receiving medication treatment for ADHD. Seventy studies were initially identified by database searching and reference list review. Consensus agreement after duplicate removal, abstract screening and full-text review led to the selection of five studies. Studies were evaluated for risk of bias with regards to sequence generation, allocation concealment, blinding, incomplete data, selective outcome reporting and other sources of bias. Treatment efficacy was assessed based on mean change in score on three ADHD rating scales: ADHD-RS-IV, CGI-ADHD-S and CPRS-R-S. Safety and tolerability was assessed based on mean change in systolic and diastolic blood pressure, pulse, and weight. SMD was used as a measure of effect size. Analysis of variance and random effects models were used. Heterogeneity and publication bias were assessed. **Results:** Of 2,590 randomized patients, 2,278 (88%) were included in the statistical analysis. Pooled SMD for all efficacy measures (ADHD-RS-IV: -0.223, CGI-ADHD-S: -0.192, ADHD-R-S: -0.142) demonstrate small effect sizes. Stimulants yielded a statistically significant decrease in score on the ADHD-RS-IV and CGI-ADHD-S. Pooled SMD for all safety and tolerability measures (systolic BP: -0.056, diastolic BP: -0.083, pulse: -0.137, weight: -0.222) demonstrate small effect sizes and no statistically significant results. Heterogenity was noted in four outcome measures. No publication bias was found. **Conclusion:** Stimulants demonstrated slightly superior efficacy in producing symptom improvement on three ADHD-rating scales, with statistical significance achieved on two (ADHD-RS-IV and CGI-ADHD-S). However, with primarily small effect sizes, results are unlikely to translate into clinical significance. While atomoxetine may not be superior to the current standard of care, it is a valid treatment alterative, and future comparison studies are warranted. Stimulants produced smaller increases in blood pressure and pulse and a smaller decrease in weight. With primarily small effect sizes and no statistically significant results, atomoxetine demonstrates comparable safety and tolerability to stimulants and should have the same weight and vital sign monitoring guidelines as stimulants.

NO. 54

INTERRATER VARIABILITY AMONG INTRAINING PSYCHIATRIC RESIDENTS IN IDENTIFYING DIAGNOSES OF SCHIZOPHRENIC DISORDER AND TREATMENT-RESISTANT SCHIZOPHRENIA

Lead Author: Balwinder Singh, M.D., M.S.
Co-Author(s): Laura A. Kroetsch, M.D., K. Cyrus Ghaedi, D.O., M.Sc., James L. Roerig, Pharm.D.

SUMMARY:

Objective: Clozapine is the only antipsychotic medication that has shown superior efficacy for patients with treatment-resistant schizophrenia (TRS) and is associated with lower readmission rates and mortality as compared with other antipsychotics. For clinical and research studies, accurate diagnosis of patients with schizophrenic disorders and TRS is of prime importance. The interrater reliability among in-training psychiatric residents for the diagnosis of schizophrenic disorder and TRS (according to the current definitions and guidelines) has never been examined before. This study was conducted as a part of an ongoing historical cohort study assessing the antipsychotic usage trends and outcomes in schizophrenia spectrum disorders amongst a population-based sample. Our objective in the present study was to assess the reliability of diagnoses of schizophrenic disorders and TRS (among patients who meet criteria for clozapine initiation) at a community center. **Methods:** We examined the electronic health records and paper charts of 40 randomly selected

adult (>=18 years old) patients with and without the schizophrenic disorders who received care at a regional human service center at Fargo, North Dakota, between June 1, 2009 and June 30, 2014. Diagnoses of schizophrenic (schizophrenia and schizoaffective) disorders were confirmed after reviewing medical records by in-training psychiatric residents. This was performed in collaboration with a board-certified psychiatrist, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV-TR or *DSM-5* diagnostic criteria. Diagnosis of treatment-resistant schizophrenia was defined according to the standard guidelines as "an inadequate response to sequential treatment with two different antipsychotics at adequate dose, duration and adherence." Patients with a diagnosis of psychosis NOS, schizophreniform, brief psychotic disorder or schizotypal/schizoid personality disorder were excluded. Interrater reliability for diagnosis of schizophrenic disorders and TRS, as well as for initiation of clozapine, was compared using Cohen's kappa statistics. **Results:** Of the 40 randomly selected patient charts with and without schizophrenic disorders, 57.5% were male and 79% were Caucasian. Two reviewers (to establish the abstraction procedures) independently reviewed these charts. Interrater diagnostic reliability for schizophrenic disorders was excellent between the two reviewers, κ=0.93 (agreement of 97.5 %). Interrater diagnostic reliability for TRS was also excellent between the two reviewers, κ=0.77 (agreement of 95%). **Conclusion:** Excellent interrater reliability was found for in-training psychiatric residents when diagnosing schizophrenic disorders and treatment-resistant schizophrenia according to the DSM and latest guidelines.

NO. 55

EXAMINING RACIAL DIFFERENCES IN DIABETES AMONG PEOPLE WITH SERIOUS MENTAL ILLNESS

Lead Author: Walker Daniel Keenan, B.S.
Co-Author(s): Dean Schillinger, M.D., Eric Vittinghoff, Ph.D., Jennifer Creasman, Christina Mangurian, M.D.

SUMMARY:

Background: People with serious mental illnesses (SMI; e.g., schizophrenia and bipolar disorder) are at a significantly higher risk of developing cardiovascular disease than the general population. Some small studies suggest racial and ethnic minorities with SMI are at a higher risk of developing these illnesses than whites with SMI. Our objective was to calculate incidence rates and prevalence of diabetes in a large, racially diverse population with SMI. **Methods:** We conducted a retrospective cohort study of people with SMI in California. Inclusion criteria included Medi-Cal insured, age must be ≥18 and <69 years, SMI diagnosis, must be taking antipsychotic medication. Exclusion criteria included eligible for Medicare, diagnosis of diabetes or use of diabetes medication during the first study period (January 1, 2009 – December 31, 2009). The primary outcome was incident diabetes that was diagnosed during the second screening period (October 1, 2010 – September 30, 2011). A diagnosis of diabetes was determined if ICD-9 criteria were met or if diabetes medication was prescribed. Prevalence was determined during the second period as people with the disease among all screened. **Results:** The incidence rate of diabetes was 10.93/1,000, with diabetes prevalence being 27%. Race had variable impacts on diabetes disease burden. Schizophrenia generally had higher incidence rates and prevalence of diabetes compared to other psychiatric diagnoses. **Conclusion:** The incidence and prevalence of diabetes in this SMI population are higher than the general population. Health care administrators should implement policies to increase screening and treatment of metabolic disorders among patients taking antipsychotic medication. Further study is needed to clarify the relationship between race and incidence of diabetes in SMI patients. In addition, more research is needed to clarify the relationship between the diagnosis of schizophrenia and diabetes.

NO. 56

PATIENT FEEDBACK OF ELECTRONIC MEDICAL RECORDS IN AN OUTPATIENT PSYCHIATRIC SETTING

Lead Author: Walter Piddoubny, M.D.
Co-Author(s): Lama Bazzi, M.D., Michelle Curro, D.O., Reena Baharani, M.D., Karen Chen, M.D., Erica Lo Re, M.D., Fiana Klein, M.D.

SUMMARY:

Objective: Understand patients' perceptions of electronic health records (EHRs), their impact on quality of care and privacy concerns. **Background:** The American Reinvestment and Recovery Act (ARRA) of 2009 included the Health Information Technology for Economic and Clinical Health (HITECH) Act, which incentivized the use of EHRs by defining meaningful use standards and encouraging doctors to use EHRs as a tool to improve patient care. For providers who use certified EHRs, Medicaid promises maximum incentive payments. Medicare

will penalize those not using EHRs by 2015 at rates that will increase yearly. In June 2014, the Stony Brook University Medical Center Outpatient Psychiatric Clinic (SBU-MC OPD) adopted an EHR in compliance with the HITECH Act. EHRs have been used in psychiatric OPDs and hospitals to improve quality of care and patient safety, reduce costs, and increase coordination among health care professionals. Doctors cite concerns including the cost of EHR systems, system downtime, privacy and stigmatization of psychiatric patients seen in other health care settings. **Methods:** An optional five-question, multiple choice, anonymous survey was made available to patients in the SBU-MC OPD waiting room. The survey included additional space for patients' comments on their perception of medical records' privacy and the quality of care being provided. **Results:** Of a possible sample of 430 patients, 59 completed the survey (13.7% response rate). Of the responders, 94.9% felt that EHRs had impacted the quality of their medical care in a strongly positive, positive, or neutral way. When asked how the sharing of medical information through the EHR impacted quality of medical care, 96.6% responded strongly positive, positive, or neutral. Views on the privacy of medical records did not change in 84.7%, and 83% did not have concerns about privacy of the medical record prior to EHR. **Discussion:** The HITECH Act mandates that health care providers adopt meaningful use of EHRs or face cuts in Medicare reimbursement. Doctors cite privacy concerns as one reason they are reluctant to adopt EHRs. Some providers worry that using EHRs will affect the quality of care they offer their patients and force them to spend more time on documentation and less on forming a rapport with patients. Our study at SBUH-MC OPD demonstrated that our patients did not feel that the EHRs negatively affected their relationship with their doctor. They viewed the transition to EHR positively and did not express concerns over the privacy of their medical records. No patients felt that the quality of care they were receiving was compromised. Despite the fact that health care providers continue to express concerns surrounding EHR use, patients embrace EHRs as part of changing health care. As EHRs gain acceptance, more research is warranted into the effects meaningful use has on the quality of care being provided to patients.

NO. 57

PTSD SYMPTOMS IN ACUTE PSYCHIATRIC INPATIENTS: PREVALENCE AND IMPACT ON COMORBID DIAGNOSES, DEMOGRAPHICS AND LENGTH OF STAY (LOS)

Lead Author: Christopher James
Co-Author(s): Pratikkumar Desai, M.D., M.P.H., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: The lifetime prevalence rate for post-traumatic stress disorder (PTSD) in the United States is estimated at 8.7%. PTSD is often comorbid with other psychiatric disorders but often goes unrecognized, despite evidence that the presence of comorbid PTSD in adult psychiatric inpatients may be linked to an elevated risk for psychiatric admission, suicide attempts, and alcohol abuse. The current study investigated the prevalence of comorbid PTSD in an inpatient psychiatric population and compared primary diagnosis, sociodemographic variables and hospital length-of-stay (LOS) in the patients with and without comorbid PTSD. **Methods:** 115 patients with a primary diagnosis of MDD, bipolar, schizoaffective disorder or schizophrenia per *DSM-IV-TR* criteria admitted to an academic hospital between July 1 and December 31, 2014 completed the PTSD Checklist for DSM V (PCL-5). The PCL-5 is a standardized 20-item self-report measure designed to screen for PTSD symptoms and also to make a provisional diagnosis of PTSD. The PCL-5 includes symptom cluster severity scores based on DSM-V (B-E) criteria. A total PCL-5 cut point score >38 is considered threshold criteria for a provisional diagnosis of PTSD and was used to divide the inpatient sample into a group with comorbid PTSD and a group without comorbid PTSD. Potential group differences in primary psychiatric diagnosis, sociodemographic variables and LOS were examined using an independent sample t-test for continuous variables and a chi-square test for categorical variables. Linear regression was also used to examine the potential relationship between PCL-5 score, independent PCL-5 cluster scores (B-E) and LOS. **Results:** 38.3% (38/115) of the acute psychiatric inpatients met criteria for a provisional diagnosis of DSM-V PTSD per PCL-5 score >38. The mean age was significantly higher ($p<0.05$) for the patient group with comorbid PTSD (mean+SEM, 36.8+1.4) than the non-PTSD (32.9+1.4) group. However, no group differences in primary psychiatric diagnosis, gender, race or LOS were detected between the patients with versus. those without comorbid PTSD. There was also no significant linear relationship identified between total PCL-5 scores, specific PCL-5 cluster scores or LOS ($r2=0.0002$, $p=0.8786$). **Conclusion:**

These results suggest that more than a third (38.3%) of acute psychiatric inpatients meet criteria for a provisional diagnosis of PTSD. The mean age was significantly greater in patients with comorbid PTSD than those without comorbid PTSD, but other demographic and clinical features explored in this study failed to detect significant group differences between those with and without comorbid PTSD. This study confirms that comorbid PTSD is relatively common in patients acutely hospitalized for serious mental illness, but also highlights the need for further exploration of the demographics, clinical features, and prognostic factors that may differentiate inpatients with and without comorbid PTSD.

NO. 58

BORDERLINE PERSONALITY TRAITS IN PSYCHIATRIC INPATIENTS: A POSITIVE PREDICTOR?

Lead Author: Shelly T. Tran, M.D.
Co-Author(s): Jigar Chotalia, M.D., M.P.H., Teresa Pigott, M.D.

SUMMARY:

Background: Length of stay (LOS) is an important measure of the relative cost-effectiveness of inpatient psychiatric treatment, but there are limited data concerning the impact of concurrent Axis II psychopathology on LOS. The patient-rated Borderline Personality Questionnaire (BPQ) has been reported to be a useful screening tool in identifying borderline personality traits in clinical populations. A total BPQ score >56 correlated with an overall diagnostic accuracy of 85% for BPD in a previous report. The current study used the BPQ to examine the potential role of coexisting borderline personality disorder (BPD) traits on LOS in psychiatric inpatients. **Methods:** 142 patients with a primary diagnosis of MDD, bipolar, schizoaffective disorder or schizophrenia by *DSM-IV-TR* criteria admitted to an academic hospital between July 13 and 14 completed the BPQ. Univariate, bivariate (t-test, chi-square test) and multivariate analyses were then conducted to examine the potential relationship between LOS and the BPQ, adjusting for known and unknown confounders, including age, gender, race, urine drug screen results and number of admissions. **Results:** 12.7% (18/142) of the inpatients scored >56 on the BPQ, consistent with a diagnosis of BPD. Regression analysis revealed that the presence of BPD (β=-2.22 $p<0.05$) predicted shorter LOS in our inpatient sample. No significant results were found in regards to the other factors examined. **Conclusion:** While preliminary, these results suggest that the presence of coexisting BPD in acutely hospitalized psychiatric patients may predict a shorter LOS. Further studies are needed to examine the potential impact of personality traits on LOS.

NO. 59

DELIRIUM: COULD BE A NIGHTMARE ON CALL AT AN INPATIENT PSYCHIATRIC FACILITY

Lead Author: Reena Kumar, M.D.
Co-Author(s): Lauren Alyse Lepow, M.S., B.A., Deborah Ann Silverman, M.S., B.S..

SUMMARY:

This poster presents an interesting case of delirium that started with a subtle presentation of restlessness progressing to daytime masturbation and finally to altered mental status. Upon interview, the patient denied any recent alcohol use. His UDS was positive for BZD, marijuana and cocaine. **Conclusion:** We report a subtle but crucial presentation of delirium that we as psychiatrist should always keep in mind to decrease morbidity/mortality in the inpatient psychiatric population.

NO. 60

RELIGIOSITY IN ACUTE PSYCHIATRIC INPATIENTS: RELATIONSHIP WITH DEMOGRAPHICS, CLINICAL FEATURES AND LENGTH OF STAY

Lead Author: Noha Abdel Gawad, M.D.
Co-Author(s): Jigar Chotalia, M.D., M.P.H., Ajay Parsaik, M.D., M.S., Teresa Pigott, M.D.

SUMMARY:

Background: There is increasing evidence pointing to an association between religiosity and mental health outcomes. Several studies have reported lower symptom severity, lower suicidality and better quality of life in depressed patients with higher religiosity; however, results are inconsistent in patients with bipolar disorder, while studies are lacking in patients with psychotic disorders. **Objective:** To examine the association of self-reported religiosity to selected mental health outcomes including length of stay (LOS), suicidality and psychotic symptoms in the psychiatric inpatient population. **Methods:** 175 patients with a primary diagnosis of a MDD, bipolar, schizoaffective disorder or schizophrenia per *DSM-IV-TR* criteria admitted to an acute psychiatric hospital between July 13 and 14 completed the Duke University Religion Index

(DUREL). The DUREL, a five-item self-report scale, was developed to examine relationships between religion and health outcomes. The DUREL measures religious involvement in three major subscales: organized religious activity (ORA), nonorganized religious activity (NORA) and intrinsic religiosity (IR). The Clinician-Rated Dimensions of Psychosis Symptom Severity, an eight-item measure that assesses the severity of mental health symptoms important across psychotic disorders, was also used to assess for the presence and/or severity of psychosis at the time of admission. As recommended, the relationship between each DUREL subscale and health outcomes was examined independently. Patients were considered to have high religious involvement (HRI) if they scored high on any one of the three subscales, i.e., ORA ≥5, NORA ≥5 and IR ≥12. Univariate analysis was performed to explore the distribution of variables and identify any outliers. Bivariate analyses with chi-square and t-tests were performed to examine relevant associations. **Results:** 36% of the inpatients had high ORA (≥5) and were more likely to be females (47%) than males (27%, $p<0.01$). ORA scores were not significantly related to age, demographics or psychotic symptomatology. 54% of the inpatients met criteria for high IR (≥12). However, there was no significant relationship identified between IR and age, demographics or psychotic symptomatology, except for high IR and African-American ethnicity that approached significance (66%, $p=0.051$). 39% of the sample had high NORA (≥5), and this finding was associated with the presence of psychosis ($p<0.05$), increased psychotic severity (14.5±5 vs. 12.4±6, $p<0.05$) and a longer LOS (8.3±3.8 vs. 6.9±3.4, $p<0.05$). Conversely, a low NORA score was associated with having a higher number of suicide attempts (71%, $p<0.05$). **Conclusion:** While preliminary, these results suggest that a brief measure of religiosity can provide some important information concerning clinical features and acute outcome in patients hospitalized with serious mental illness.

NO. 61

CONVERSION DISORDER: MODALITIES OF TREATMENT

Lead Author: Muhammad A. Anees, M.D.
Co-Author(s): Saad Ahmed, M.D., Lauren Bryant, Asghar Hossain, M.D.

SUMMARY:

Conversion disorder presents with symptoms of altered voluntary motor or sensory function, and findings demonstrate incompatibility between the symptomatology and recognized neurologic or general medical conditions. Symptoms or deficits cause significant distress and psychosocial impairment. Several subtypes have been recognized based on presenting symptom or deficit. We have demonstrated a case where the patient has presented with several neurological deficits of motor and sensory function, including multiple episodes of psychogenic nonepileptic seizures. Diagnosis can be quite challenging and requires a detailed history and physical exam, selected testing, and a psychiatric evaluation. Moreover, certain modalities of treatment for conversion disorder have also been discussed.

NO. 62

WEIGHT EFFECTS OF ARIPIPRAZOLE MONOTHERAPY VERSUS ARIPIPRAZOLE ANTIDEPRESSANT POLYPHARMACY IN AN OUTPATIENT SAMPLE: A RETROSPECTIVE CHART REVIEW

Lead Author: Amanda Suzuki, M.D.
Co-Author(s): Michael Marcus, M.D., Grace Lynn, M.D., Charles Nguyen, M.D., Adrian Preda, M.D., Robert Bota, M.D.

SUMMARY:

Objective: The 5-HT2C receptor has been identified as an important modulator of appetite and, by extension, weight gain. Antagonism of the receptor has been associated with increased food intake and obesity. Aripiprazole has low associated risk of weight gain, which may be due to the fact that is a partial agonist at the 5-HT2C receptor. However, used in conjunction with antidepressants with high serotonergic activity, aripiprazole may act antagonistically at 5-HT2C and cause weight gain. A previous study through the VA showed statistically significant weight gain in patients taking aripiprazole plus high serotonergic therapy compared to aripiprazole monotherapy or aripiprazole plus bupropion, which has low serotonergic activity. This study seeks to evaluate the weight gain effect within a community-based population. **Methods:** A retrospective chart review of Kaiser Permanente Southern California members compared patients' weight and BMI over the course of 180 days while taking aripiprazole monotherapy (n=575), aripiprazole and high-serotonergic antidepressants (fluoxetine, paroxetine, citalopram, escitalopram, sertraline, fluvoxamine, mirtazapine, venlafaxine,

duloxetine) (n=1,210) and aripiprazole and a low-serotonergic antidepressant (bupropion) (n=120). **Results:** Within this population, patients on aripiprazole monotherapy showed statistically significant weight gain, suggesting that aripiprazole treatment is not weight neutral. However, there was no statistically significant difference in weight gain between the aripiprazole monotherapy, the high serotonergic combination group or the low serotonergic combination group. This finding applied even within the subset of patients who were considered obese. **Conclusion:** Patients in all three test groups showed increased weight gain, including aripiprazole monotherapy. Our data is inconsistent with previous findings showing that aripiprazole is associated with increased weight gain when used in conjunction with high-serotonergic antidepressants. Differences in the sample population may provide some insight; the Kaiser population was predominantly female, and the proportion of obese patients within the high serotonergic group was higher than the other groups. The results reflect the complexity of the relationship between weight gain and psychotropic medications and suggest that additional factors may affect aripiprazole's actions on 5-HT2C receptors that indicate a need for further research.

NO. 63

ASSOCIATIONS OF ALCOHOL CONSUMPTION AND MARIJUANA USE WITH MAJOR DEPRESSIVE EPISODE: RESULTS FROM THE 2011 NATIONAL SURVEY ON DRUG USE AND HEALTH DATA

Lead Author: Joseph C. Ikekwere, M.D., M.P.H.
Co-Author(s): Josephine Igwacho, D.N.P., A.P.N., Nagesh Aragam, Dr.P.H., Ying Liu, Ph.D., Ke-Sheng Wang, Ph.D.

SUMMARY:
Objective: At the conclusion of this presentation, the participant should be able to 1) Describe the epidemiology of major depression, especially in the United States; 2) Determine the major risk factors associated with major depressive episode; and 3) Understand racial and gender differences in relation to the prevalence of major depression/depressive episode. In this study, we analyzed the 2011 National Survey on Drug Use and Health (NSDUH) data to determine the prevalence and associations of alcohol and marijuana use, as well as cigarette smoking status, with MDE among U.S. adults and tested whether such associations differ by gender. **Background:** Major depressive episode (MDE) is a complex disease that affects not only the lives of patients but also their family members and has become one of the major disabilities worldwide, ranking 4th and estimated to become 2nd by 2030. Depression is a complex disorder stemming from many causes including substance abuse, smoking, alcohol, anxiety, marital problems and other psychological problems. More recently, an increasing number of depression cases reported in the literature have been attributed to the use of marijuana, which has provoked public health concerns. **Methods:** We used the adult data from the 2011 NSDUH, which included 2,967 MDE patients (836 males and 2,131 females) and 35,653 controls (17,346 males and 18,307 females). Weighted univariate and multiple logistic regressions were used to estimate the associations between potential factors and MDE. The odds ratios (ORs) with 95% confidence intervals (CIs) were estimated. **Results:** The overall prevalence of MDE was 7.5% (4.75% for males versus 10.1% for females), the prevalence of the age group of 26 – 49 (8.2%) was greater than that of the younger age group of 18 – 25 (6.3%) and the older age group of 50+ (7.2%) and the prevalence for Caucasians (9.0%) was higher than for African Americans (3.5%) and Hispanics (5.1%). In the multiple logistic regression analysis, marijuana use in the past year (OR=1.44, 95% CI=1.21 – 1.71), current drinking (OR=1.76, 95% CI=1.33 – 2.34), past drinking (OR=2.28, 95% CI=1.67 – 2.31), current smoker (OR=1.62, 95% CI=1.34 – 1.95) and former smoker (OR=1.24, 95% CI=1.02 – 1.51) were significantly associated with increased odds of MDE. Stratified by gender, current smoker was significantly associated with MDE both in males and females. Besides the current smoker, four more factors, including marijuana use in the past year (OR=1.68, 95% CI=1.35 – 2.09), current drinking (OR=2.21, 95% CI=1.62 – 3.04), former drinking (OR=2.57, 95% CI=1.82 – 3.62) and former smoker (OR=1.34, 95% CI=1.08 – 1.67), were significantly associated with increased odds of MDE in females only. **Conclusion:** Cigarette smoking and alcohol and marijuana use were positively associated with MDE. However, such associations differed by gender.
Keywords: Major Depressive Episode, Prevalence, Marijuana, Alcohol, Smoking, Gender Differences

NO. 64

SUICIDE CRISIS ON CAMPUS: SUICIDE ATTEMPTS AND IDEATION IN THE COLLEGIATE POPULATION EVALUATED IN THE EMERGENCY DEPARTMENT

Lead Author: Souraya Torbey, M.D.

Co-Author(s): Diana Robinson, Priyanka Vakkalanka, James Thomson, Christopher Holstege

SUMMARY:
Throughout life, people transition between many different developmental stages. Genetics and environmental stressors significantly impact an individual's predisposition to developing mental health disorders. The transition of young adults from high school to college presents newfound freedoms as well as exposure to significant stressors, including financial, personal and academic strain. Frequently, individuals are faced with heightened financial and academic stressors, family pressure to succeed, moving to a new location with less adult supervision, a diminished support group and increased exposure to drugs and alcohol and undergo a redefinition of personal identity and goals with increased requirement of self-motivation. Therefore, this can be a period of self-exploration and growth potentially fraught with setbacks and development of mental health disorders that may progress to suicidal ideation (SI) or suicide attempts (SA). In 2008, the American College Health Association initiated the National College Health Assessment II. According to the survey results, 30% of college students reported feeling "so depressed that it was difficult to function" at some time in the past year. Results showed that six percent of undergraduate and four percent of graduate students in four-year colleges seriously considered suicide; around one percent had attempted suicide within the past year. 1,100 suicides occur at colleges every year (roughly 7.5 per 100,000 students). The University of Virginia has long been committed to improve mental health in the college student population and has established a database to better capture student utilization of the emergency department (ED). This repository, the Student Health Research Database, consists of a subset of UVA students who are seen in the UVA Health System ED. Using this database, we assessed students who presented to the ED with SI or SA between July 2009 and June 2015. We will present data on the prevalence of SI and SA amongst this population as the proportion of SI/SA-related events of all student ED visits, evaluating the correlates and epidemiological characteristics of these students, including but not limited to demographics, academic affiliations and Interfraternity/sorority affiliations. We will also identify and quantify the situational or contextual factors contributing to these visits, which include assessing sources of stressors (e.g., academic, financial, personal, etc.) and examining length of hospital stay and disposition. A key component to this study is to characterize the methods of suicide attempts with particular attention to attempts involving toxic ingestion. To the best of our knowledge, there has yet to be a study investigating SA by ingestion of specific substances in the college student population, which may provide insight into the phenotype of suicidality in the collegiate population.

NO. 65

GGT AS A MARKER OF ALCOHOL ABUSE: IS IT A MUST?

Lead Author: Narissa R. Etwaroo
Co-Author(s): Astik Joshi, M.D., Shawn McNeil, M.D.

SUMMARY:
Alcohol abuse is a prominent cause of liver disease and a significant cause of morbidity and mortality. Gamma-glutamyl transferase, or GGT, is an enzyme that may be elevated in liver and bile duct diseases. GGT is also present in the kidneys, pancreas, spleen, heart, brain and seminal vesicles. It has a role in amino acid transport. This enzyme correlates well with the alkaline phosphatase level in patients with liver damage, although alkaline phosphatase is also increased in patients with bone disease. Other markers that correlate well with GGT are 5'-nucleotidase and leucine-aminopeptidase. Another cause of elevated GGT is the use of barbiturates and phenytoin. Also, in some case reports, GGT was found to be more sensitive than CDT and MCV. In general, a higher level of this enzyme correlates to greater liver damage. A correlation has been associated with alcohol abuse in the literature; we reviewed the role of GGT as a marker for liver damage in patients who abuse alcohol compared to aspartate transaminase (AST), alanine transaminase (ALT), carbohydrate deficient transferrin (CDT) and mean corpuscular volume (MCV) levels. It has been postulated that obtaining GGT levels in individuals with suspected alcohol abuse can help to establish a diagnosis of alcohol use disorder. We have ongoing research that analyzes the usefulness of obtaining a GGT level in patients with alcohol abuse. As an area of future research, clinicians could obtain GGT levels on patients suspected of alcohol abuse in the emergency setting. There are several advantages to the use of a GGT level, as it is inexpensive and readily available.

NO. 66

WHERE DO WE STAND IN THERAPEUTIC DRUG MONITORING FOR MOOD STABILIZERS IN PATIENTS WITH BIPOLAR DISORDER?

Lead Author: Zahid Islam, M.D.
Co-Author(s): Pankaj Manocha, M.D., Agshar Hossain, M.D.

SUMMARY:
Background: Mood stabilizers are used for acute and maintenance treatment for bipolar disorder (BPD). Therapeutic drug monitoring (TDM) is a valid tool to optimize pharmacotherapy, but there is no national guideline for monitoring mood stabilizer level in the treatment of psychiatric patients. **Objective:** The objective of this poster is to assess clinical practice guidelines for monitoring serum levels of mood stabilizers such as lithium, valproic acid and carbamazepine. **Methods:** Available literature found from PubMed, Google and UpToDate were reviewed. **Results:** Lithium levels should be estimated 12 hours (10 – 14 hour range) after the last prescribed dose, which is often given at bedtime for a morning sample. Plasma concentrations of lithium are measured weekly for four weeks, monthly for three months and then every three months or when symptoms arise. Valproic acid levels should be assessed at two weeks and then every three months or when symptoms arise. Blood chemistry levels should be drawn every month for six months and then every six months or when symptoms arise. Carbamazepine levels should be assessed at two weeks and then every three months or when symptoms arise. Complete blood count and liver function tests are assessed at two weeks, monthly for three months and then every three months or when symptoms arise. **Discussion:** These drugs have serious adverse effects and require consistent monitoring. Lithium use is associated with glomerular and tubular disorders, resulting in chronic kidney disease. Valproic acid may increase the risk of PCOS and can cause hepatocellular damage. Carbamazepine administration requires monitoring of serum sodium levels when taken alongside other hyponatremia-causing drugs. Carbamazepine also increases the metabolism of other drugs and can decrease their blood levels. **Conclusion:** There is a need for national guidelines in monitoring blood levels of these medications in considering patient safety.

NO. 67

HOMICIDAL IDEATION IN PSYCHIATRIC EMERGENCY ROOM

Lead Author: Jack Wang, D.O.
Co-Author(s): Suzanne Holroyd, M.D.

SUMMARY:
Background: Homicidal ideation (HI) is a serious symptom that is routinely assessed, usually along with suicidal ideation (SI), during psychiatric evaluations. Although HI has been found to be less common than SI, there is very limited study of HI in psychiatric settings. To our knowledge, there is little study examining HI and associated psychiatric comorbidities in the psychiatric emergency room (ER). In this study, we examined the prevalence of HI and associated factors in the psychiatric ER setting. **Methods:** 226 consecutive psychiatric ER patients from an academic medical center were examined by retrospective chart review. Three patients did not have data regarding HI and were excluded from the study, leaving 223 subjects. Data collected included demographics, clinical variables, past history of HI, current HI, psychiatric diagnoses, substance use and family history. Data was entered into SPSS and analyzed. **Results:** Homicidal ideation was present in 6.3% (N=14) of patients presenting to a psychiatric ER. Of these, 79% (N=11) had a prior history of HI, and 79% (N=11) also had SI. The majority (62%, N=8) also had illicit substance use. Variables that were significantly associated with having HI included having remote (p=0.001) or recent (p=0.031) history of HI, current SI (p=0.006), having SI with a plan (p=0.013), and current illicit substance use (p=0.027). Variables with a trend toward significance included family history of suicide attempt (p=0.063), white race (p=0.066) and THC use (p=0.070). Of the patients who presented with HI, 79% (N=11) were admitted to the hospital; 21% (N=3) were involuntarily admitted. Interestingly, there was no association of HI with age; gender; presence of psychosis, mood disorder or other psychiatric diagnosis; or other substance use including alcohol. **Conclusion:** Although not common in the psychiatric ER, presence of HI is significantly associated with illicit substance use disorder, suicidal ideation and history of HI. While SI is associated with mood disorders, HI is not, likely reflecting a more heterogeneous population that presents with HI. This study adds to a very limited literature of HI in psychiatric settings and identifies several significant variables that can be employed as screening criteria in a psychiatric ER setting to assess risk of this potentially dangerous mental state.

NO. 68

SCHIZOAFFECTIVE DISORDER DEPRESSIVE TYPE AND PSYCHOSIS

Lead Author: Qaiser S. Khan, M.D.
Co-Author(s): Gayathri Dasharathy, Phebe Tucker, Mustansar Raza

SUMMARY:

Background: We present a clinical case of N.B., a 60-year-old female with a four-year history of delusions and compulsive cleaning behaviors leading to severe facial lesions. Worsening symptoms led to hospitalization in a geriatric psychiatry unit. N.B.'s clinical presentation, past treatments, differential diagnoses, hospital course and treatments will be discussed. **Case:** N.B. was brought to the ER after scrubbing her face in response to a delusion that her daughter was poisoning water used in bathing. Her repeated facial scrubbing with rainwater and in a local river to remove the poison led to infected facial wounds. She refused to wear clothes from her daughter's house, believing they were tainted. N.B. also had a delusion that others were putting things in her bed. She had been depressed with poor sleep and appetite for a few weeks, with anhedonia and psychomotor agitation. N.B.'s problems were first treated in 2011 by her PCP, when she used hydrogen peroxide on her face, accused her family members of putting glue on her face and believed her face was covered in plastic. She was prescribed aripiprazole 5mg QD, but she was nonadherent and had increasing paranoia and compulsive cleansing behaviors. Early in her hospitalization, she refused to eat, take showers or sleep in the unit bed because of delusional beliefs that the bed sheets were poisoned. N.B. isolated, refusing to participate in group activities. Wound scratching persisted, with further facial injuries requiring treatment. Her medications included aripiprazole, increased to 15mg QD, with added fluvoxamine at 50mg PO BID. Fluvoxamine was changed to 100mg PO HS due to daytime sleepiness. She gradually began to interact, slept in her bed and reduced facial scrubbing. At discharge, N.B.'s mood, agitation and delusions improved markedly. Medical records revealed a presumptive diagnosis of schizoaffective disorder. The psychosis was episodic and never treated before four years prior. **Discussion:** Psychosis can present with many clinical manifestations, including delusions, hallucinations, disorganized thoughts and agitation. Differential diagnoses for psychosis in elderly patients includes a primary psychotic disorder such as schizophrenia, schizoaffective disorder, delusional disorder and schizotypal personality disorder; a mood disorder with psychotic features such as bipolar disorder or major depression; and an obsessive-compulsive-related disorder such as OCD or excoriation disorder. Also possible is psychosis due to a primary medical or neurological condition such as an endocrine disorder, infectious disease, hepatic or renal disorder, inflammatory or demyelinating disorder, metabolic disorder, acute medical condition, or neurodegenerative disorder such as Alzheimer's or vascular disease. Given N.B.'s history and presentation, she was diagnosed with schizoaffective disorder, depressive type. She was discharged for continued care in her rural community by her PCP, outcome unknown.

NO. 69

SENSORY REDUCTION OF INTERNAL MILIEU AS A MEANS OF REDUCING PHYSICAL RESTRAINTS IN A HIGH-ACUITY INPATIENT PSYCHIATRIC UNIT: A QI PROJECT

Lead Author: Svetlana Yakov, M.D., Ph.D.
Co-Author(s): Kinjal J. Ghelani, M.D., Melissa F. Bearden, Barbara M. Aguilar, B.S.N., R.N., Rachel E. Fargason, M.D., Badari Birur, M.D.

SUMMARY:

Agitation in patients on high-acuity inpatient psychiatric units often results in the need for IM pharmacotherapy and physical interventions such as manual hold, physical restraints and seclusion. Preventative measures to reduce agitation could abate the psychological and physical trauma that can result from these active interventions. Over the last five months, physical restraints were required an average of 26 times per month on our high-acuity 20-bed inpatient psychiatric unit at University of Birmingham. For this quality improvement project, we aim to reduce sensory input in the unit milieu, an alternative, noncoercive approach to prevent aggressive behaviors and decrease number of forceful interventions (restraints) as well as to reduce risk of harm to the patients and staff on a high-acuity psychiatric unit (assault rate). This quality improvement project will involve implementing a new sensory reduction measure each month between 4 and 7 pm, the most common time of day during which restraints are required; these measures include, but are not limited to, the following: 1) soft music; 2) meditation/yoga/mindfulness; 3) light adjustments and/or ambient lighting; 4) sensory diet activities including weighted vests; 5) art therapy; and 6) required reduced speech-volumes to reduce

overstimulation in the hospital milieu of the unit for sensory-overloaded patients. Multidisciplinary teams including occupational therapists, “art in medicine” group, nursing, ancillary staff and doctors will participate in this project that will be implemented for the next six months. Supplies for these processes, such as speakers, nonfluorescent bulbs, weighted vests and drawing utensils, will be funded by UAB Hospital. Self-assessment behavioral/emotional scales; BPRS/agitation scales; and monthly restraints, seclusions and IM medication interventions will be performed at baseline and one month after each new intervention to assess for trends resulting from each intervention. Only interventions showing improvement will be continued for the full study period. At the termination of the project, preimplementation assault and restraint rates will be compared to postimplementation data for significant differences. The final results will be discussed at the time of poster presentation at the APA meeting, 2016. Successful interventions will be rolled out to other adult inpatient units.

NO. 70

RELEVANCE OF OBTAINING MAGNESIUM LEVELS IN PATIENTS WITH ALCOHOL ABUSE

Lead Author: Astik Joshi, M.D.
Co-Author(s): Narissa R. Etwaroo, M.D., Shawn E. McNeil, M.D.

SUMMARY:
Hypomagnesemia is a common electrolyte derangement in hospitalized patients. Causes can be multi-factorial, including poor intake, renal losses and concomitant use of PPIs. Hypomagnesemia has long been correlated with alcohol abuse. Other electrolyte abnormalities, such as hypokalemia, can commonly occur, which can potentially lead to cardiotoxicity, increasing the chance of mortality. Hypophosphatemia has also been correlated to low magnesium levels. During alcohol withdrawal, magnesium shifts intracellularly, causing depletion of magnesium levels. It is of prime importance to obtain, monitor and correct magnesium levels in alcoholic patients. Hypomagnesemia can cause seizures and arrhythmias, which may be fatal. Its ability to widen QRS and prolong QTc has been clearly established. Other causes of hypomagnesemia, including medications (such as loop and thiazide diuretics) and uncontrolled diabetes, may increase risk or morbidity/mortality and should be monitored. Magnesium replenishment depends on the degree of hypomagnesemia, with intravenous replacement being recommended in symptomatic and oral replacement (if tolerated) in asymptomatic patients. Extra caution must be taken in patients with impaired renal function. Serum magnesium levels also play a central role in the balance of the other electrolytes. It is commonly missed in patients with alcohol abuse who present with psychiatric symptoms but can be a very useful tool to aid in their treatment. We propose obtaining magnesium levels in patients with alcohol use disorder as a way to decrease subsequent harm from its deficiency. Other advantages include the low cost and easy availability of testing the magnesium level. It is especially important in patients presenting in psychiatric settings, as alcohol abuse is very common in this patient population. In our opinion, obtaining magnesium levels in patients with alcohol abuse should be necessary for decreasing subsequent morbidity and mortality.

NO. 71

RELATIONSHIP OF PHYSICAL ACTIVITY TO DEPRESSION IN ADOLESCENTS WITH AND WITHOUT HISTORY OF PSYCHOLOGICAL TRAUMA

Lead Author: Andriy Yur’yev, M.D., Ph.D.
Co-Author(s): Pamela Siller, Stephen Ferrando

SUMMARY:
Objective: Physical trauma in adolescents is common, and it is important to identify factors that may protect against depression in traumatized teens. The current study explored the relationship between physical activity and depressive symptoms in adolescents with and without history of psychological trauma. **Methods:** Data for the current study was obtained from the European Social Survey (ESS). ESS is “an academically driven cross-national survey that has been conducted every two years across Europe since 2001. The survey measures the attitudes, beliefs and behavior patterns of diverse populations in more than thirty nations” (http://www.europeansocialsurvey.org/). Responses of adolescents age 15 – 18 were selected from the main database for the purpose of this study (n=1,310, mean age 16.8). Depressive symptoms were evaluated using the eight-item Center for Epidemiological Studies-Depression Scale (CESD8). A total score was calculated. In addition, respondents with a CESD8 score of 12 or more were considered depressed. History of psychological trauma was evaluated using the question “Have you or a

member of your household been the victim of a burglary or assault (footnote: physical assault) in the last 5 years?" (Answers: 1-Yes; 2-No; trauma group N=238, no trauma group n=1,072). Level of physical activity was measured using the question “Please tell me on how many of the last 7 days you were physically active continuously for 20 minutes or longer." Answer included a score 0 – 7 reflecting number of days. Linear regression analysis was employed to explore relationships between levels of depression and physical activity in samples of depressed adolescents with and without history of psychological trauma, controlling for socio-demographic and health indicators, i.e., age, gender, years of education, subjective perception of household income, subjective perception of health, mother’s and father’s employment status, and respondent’s general level of trust. **Results:** After controlling for socio-demographic and health indicators, levels of physical activity and depressive symptoms (and “clinical depression”) were inversely and significantly correlated in a sample of depressed adolescents with a history of psychological trauma. This relationship was not significant in the nontraumatized group. **Conclusion:** While these data are epidemiological in nature, physical activity may play an important role in ameliorating depression in adolescents with a history of psychological trauma, while a similar relationship of physical activity in nontraumatized adolescents was not observed in this study.

NO. 72

TOBACCO USE AND ASSOCIATED FACTORS AMONG PATIENTS PRESENTING TO A PSYCHIATRIC ER

Lead Author: Ashley D. Collins, D.O.
Co-Author(s): Dr. Suzanne Holroyd

SUMMARY:

Background: According to the CDC, 17.8% of U.S. adults smoke cigarettes, but rates are much higher in those with mental disorders. Approximately 31% of all cigarettes are smoked by adults with mental illness. Of those with mental disorders who live below the poverty level, 48% smoke cigarettes. Previous studies have examined the elevated rates of tobacco use among different psychiatric diagnoses and in specific populations and treatment settings. However, there has been little study of tobacco use in patients in the psychiatric emergency room (ER) setting. In this study, we examined the prevalence of tobacco use and associated factors among patients presenting to a psychiatric ER. **Methods:** 226 consecutive psychiatric ER patients from an academic medical center were examined by retrospective chart review. Tobacco use data was missing for 23 subjects, so they were excluded from the study, resulting in 203 subjects. Data included demographics, clinical variables, tobacco use, other substance use, psychiatric diagnoses, medications and family history. Data was entered into SPSS and analyzed using student t-tests and Fisher exact tests to compare groups as appropriate. **Results:** Of the 203 patients, 49.8% (n=101) reported using tobacco. Among these, alcohol use was reported in 32.8% (n=66) and illicit substance use in 25.1% (n=51). Active suicidal ideation (SI) was reported by 11.8% (n=24). Tobacco use was significantly associated with any other substance abuse ($p<0.001$), including alcohol use disorders ($p<0.001$), any illicit substance use ($p<0.0001$), THC use ($p<0.001$), cocaine use ($p=0.003$) and current alcohol intoxication ($p=0.007$). It was also significantly associated with a family history of alcoholism ($p=0.006$), prior psychiatric hospitalization ($p=0.023$) and active SI ($p=0.009$). The only psychiatric diagnoses associated with tobacco use in this study were substance use disorders ($p=0.009$) and dementia ($p=0.014$). Surprisingly, a family history of tobacco use was not significantly associated with tobacco use in the patient ($p=0.302$). There was also no association between tobacco use and age, gender, race, marital status, employment or living situation. **Conclusion:** Tobacco use among psychiatric ER patients is much higher than that of the general population, with half of the patients reporting tobacco use. There is a very high association of other substance use disorders with tobacco use. The associated variables of active SI, prior psychiatric admissions and other substance use disorders suggest that tobacco users may be a more psychiatrically ill group. Knowing the relationship between these variables suggests tobacco use in the ER setting could be used as a marker to identify those at risk for alcohol/illicit substance abuse, as well as for suicidal ideation. Finally, the higher prevalence of tobacco use in patients in the psychiatric ER may suggest a treatment setting where smoking cessation strategies could be encouraged.

NO. 73

WITHDRAWN

NO. 74

INCREASING CARDIOMETABOLIC RISK SCREENING AND REDUCTION OF THE RISK AMONG THE

PATIENTS ON ANTIPSYCHOTICS IN THE ADULT OUTPATIENT PSYCHIATRY CLINIC

Lead Author: Sasidhar Gunturu, M.D., M.B.B.S.
Co-Author(s): Korenis Panagiota, M.D., Shah Ketki, M.D., A. Evdokas, Ph.D., Wen Gu, Ph.D., M. Kucheria, M.D., A. Hanif, M.D., R. Schengelia, M.D., R. Cheema, M.D., A. Albassam, M.D., S. Lawler, S. Blustein, Z. Peri

SUMMARY:

People with serious and persistent mental illness (SPMI) die 25 years earlier than the general population! Sixty percent of the increased mortality is due to cardiovascular disease. In New York State, type 2 diabetes is twice as common in people with mental illness on Medicaid compared to the general Medicaid population. In a study of over 10,000 clients with schizophrenia or depression, 52% had metabolic syndrome and 92% had at least one risk factor. Forty-Three percent of clinical antipsychotic trials of intervention effectiveness (CATIE) participants had metabolic syndrome on enrollment. In this QI project, we worked on 3,348 adult outpatient psychiatric patients, used techniques like FOCUS-PDCA, brainstorming and root cause analysis to address cardiometabolic risk screening and reduce the risk among these patients. We used interventions like prescriber and patient education, streamlining the cardiovascular screening process in the clinic and multidisciplinary team discussions. We collected and analyzed data regarding clinical characteristics of such patients before and after the clinical interventions. HEDIS scores were used to measure the outcomes of the project. We aim to identify specific clinical risk factors of such patients and will consider clinical implications as well as treatment strategies to manage and improve psychiatric and medical management of such patients in the outpatient setting. This poster summarizes the project, analyzing pre- and postintervention data and important clinical strategies to address cardiometabolic risk in outpatient psychiatric clinics.

NO. 75

PSYCHIATRIC AND LEGAL CHALLENGES IN THE CARE OF TRANSGENDER INMATES

Lead Author: Rafik Sidaros, M.D.
Co-Author(s): Max Lichtenstein, M.D.

SUMMARY:

Background: The definition of transgenderism varies between the legal and medical realms. The rate of gender dysphoria (GD) is much higher among incarcerated individuals than in the general population. This may be a result of societal discrimination or a true higher rate of crime in transgender (TG) individuals. The eighth amendment has long been invoked and intricately tied to access to care for TG inmates. The aim of this study is to compile an overview of policies and laws on TG inmate mental health. **Methods:** A Google scholar search for case law from 1990 to 2015 using the keywords “transgender eighth amendment” yielded 355 cases litigated in the U.S. This was supplemented with a PubMed search for “transgender inmates,” and articles focusing on care of inmates with GD were selected. **Results:** The TG inmate population faces a unique set of challenges, not the least of which are medical care and housing. The freeze frame policy adopted by many states has been posited to constitute cruel and unusual punishment by some courts. Prohibitive policies expressly denying care for GD have been more readily struck down by the courts as an eighth amendment violation. Violence (including sexual violence) against TG inmates is substantially higher than in the general inmate population. This is directly linked to housing policies of correctional institutions. The financial cost associated with transgenderism complicates the ethical and legal considerations faced by legislators, judges and prison administrators alike. **Conclusion:** The need to involve medical and mental health professionals in housing decisions is gaining recognition by the legislature. The forensic psychiatric community has a great role to play in future research endeavors as well as recommendations for health care delivery to these vulnerable and often overlooked patients.

NO. 76

CHRONIC PHENCYCLIDINE (PCP) USE AS A DISSOCIATIVE RESPITE IN STRESS EXPOSURE AND MODE OF SELF-MEDICATION IN POST-TRAUMATIC STRESS DISORDER (PTSD)

Lead Author: Megan L. Gilman, M.D.
Co-Author(s): Andrew Allen, Camille Paglia, M.D.

SUMMARY:

Chronic stress exposure has been shown to induce both physiological and psychological changes. Psychologically, chronic stress can lead to anxiety, affective disorders and substance use disorders. Physiologically, chronic stress causes disruption of the hypothalamic-pituitary-adrenal (HPA), axis with resultant dysregulation of cortisol production and

response. Post-traumatic stress disorder (PTSD) is a clinical consequence of exposure to chronic stress and a maladaptive psychological response to an overwhelming, life-threatening trauma that is either experienced or witnessed by the affected individual. Symptoms of PTSD include intrusive, distressing memories; avoidance of stimuli associated with the trauma; negative emotional states and cognitive distortions; and hyperarousal. Phencyclidine (PCP), a glutamate NMDA receptor antagonist commonly known as “angel dust,” “dippers” or “wet,” was developed in the 1950s as a potential anesthetic for use in humans. Its use was discontinued because of the severe psychosis observed in patients after drug administration. In a 1959 study, PCP is referred to as a “schizophrenomimetic” due to the presence of positive, negative and cognitive symptoms of schizophrenia during intoxication with the drug. In the 1960s, PCP and its sister compound, ketamine, became drugs of abuse, likely for their powerful dissociative effects. PCP causes central nervous system excitation and, paradoxically, a simultaneous depression, leading to varied clinical presentations of PCP intoxication. NMDA receptor antagonism is the primary mechanism of action of PCP. Intoxicated individuals can be lethargic and stuporous or highly combative and agitated with signs of autonomic instability. Nationally, PCP-related emergency department (ED) visits have steadily increased. Philadelphia has one of the highest rates of PCP use among major American cities. At the Temple University Episcopal Campus CRC, 16% of patients with positive urine drug screens tested positive for PCP, equaling an average of four people per day presenting with PCP use. While PCP is not considered to have any medical utility in humans, studies have shown that ketamine, another glutamate NMDA receptor antagonist, is useful in treating certain psychiatric disorders. A clinically significant reduction in acute symptoms of chronic PTSD and depression has been demonstrated in affected individuals given ketamine. We hypothesize that, among patients presenting to a Philadelphia CRC, those using substances have higher rates of exposure to chronic stress and trauma than nonsubstance users, but among those substance users, rates of acute symptoms of PTSD are lower in patients using PCP than in users of drugs that are not NMDA receptor antagonists.

NO. 77

HYPERPROLACTINEMIA DURING ANTIPSYCHOTIC USE IN THE PEDIATRIC POPULATION: EARLY IDENTIFICATION AND MANAGEMENT

Lead Author: Chidinma Isinguzo, M.D.
Co-Author(s): Joshua Okoronkwo, Chijioke Isinguzo, M.D.

SUMMARY:
Prescriptions of antipsychotic medications in children and adolescents have increased exponentially in the past two decades, especially “off-label use” in indications without FDA (Food and Drug Administration) approval. This trend has persisted despite the wide gap in detailed research data about their efficacy and safety/adverse effect profile in the pediatric population. Compared to adults, children and adolescents appear to have increased risk for antipsychotic-induced hyperprolactinemia. The objective of this presentation is to provide a summary of evidence-based current literature guidelines for identification and management of hyperprolactinemia resulting from antipsychotic use in children and adolescents. Prolactin is a polypeptide hormone with a major role in milk production and lactation. Other roles include immunoregulatory, metabolic and osmoregulatory. Secretion of prolactin from lactotroph pituitary cells is mostly controlled by tonic inhibition of dopamine via D2-dopamine receptors. Antipsychotics block these receptors and, hence, can potentially block this inhibitory control, consequently increasing prolactin level. Current literature suggests that children and adolescents have an increased number of D2 receptors in striatum and, hence, may be more vulnerable to this blocking effect and may be at increased risk for hyperprolactinemia. Females are even more susceptible to the adverse end organ manifestations of elevated prolactin levels because of the modulating effects of estrogen on prolactin. Side effects of chronic untreated hyperprolactinemia include galactorrhea; possible increased breast cancer risk; pubertal failure; changes to menstrual cycle, anovulation and subsequent sub-fertility; decreased libido, impotence and orgasmic/sexual dysfunction; osteoporosis; mood symptoms including depression and anxiety; and memory problems. Not all patients with increased prolactin will demonstrate galactorrhea, breast enlargement and other classic symptoms. Hence, even though current guidelines do not suggest routine measurement of baseline prolactin level prior to commencing antipsychotic pharmacotherapy, it is important for physicians to maintain a high level of

awareness for potential endocrinologic adverse effects. Prior to prescribing an antipsychotic, it is crucial for clinicians to discuss risks versus benefits of any chosen medication with patients and their families.

NO. 78

TRAZODONE-INDUCED ACUTE URINARY RETENTION: A CASE REPORT

Poster Presenter:Vasile Savu, M.D.
Lead Author: Abhishek Rai, M.D.
Co-Author(s): Daniel Keyes, M.D.

SUMMARY:

Background: Trazodone is a serotonin antagonist and reuptake inhibitor (SARI) being used mainly as an antidepressant but also having anxiolytic and hypnotic properties. The most common reported side effects are blurred vision, dizziness, somnolence, dry mouth, nausea and fatigue; least common but more dramatic are orthostatic hypotension, cardiac arrhythmia and priapism. We are presenting the first case of trazodone-induced urinary retention. **Case:** A 22-year-old white male presented to the emergency room with abdominal pain (10/10), abdominal distention and urinary retention following intake of first dose of 100mg of trazodone prescribed by his psychiatrist for insomnia. He reported using marijuana almost daily for the last eight years with increased usage in the last two weeks. He also used ecstasy, cocaine, Adderall, heroin, Norco and Oxycontin from the age of 17 to the age of 19.The patient has a 10-year history of anxiety, which became worse six months ago. Two days before coming to the ER, the patient saw a psychiatrist and was prescribed trazodone for sleep. The patient was started on 100mg of trazodone at bedtime. The patient took his first dose of trazodone and developed severe urinary retention such that he had to come to ER for help. The patient has not been diagnosed with any bladder, kidney or prostrate problems. The ER physician found no medical cause for acute urinary retention. The patient was catheterized in the ER and requested to stop taking his trazodone. After his one-week follow-up, the patient's symptoms of urinary retention were resolved. **Discussion:** This is a case report of uncommon urinary retention promptly developed after the use of trazodone, long believed to be free of anticholinergic side effects, which was the reason it was used in cases where antimuscarinic effects were to be avoid (e.g., patients with prostatic hypertrophy, constipation or closed-angle glaucoma). The patient wasn't included in any of these categories, but not having any contraindication or history of diseases that would put the patient at risk of common or dramatic side effects of trazodone, he was considered a safe candidate for the drug. **Conclusion:** This case draws attention the uncommon side effect of urinary retention related to trazodone; therefore, we recommend alertness regarding this less-reported side effect when prescribing the above-mentioned medication.

NO. 79

MASTERING THE INTERPRETER PHONE: AN INTEGRATED LITERATURE REVIEW WITH DRAFT RECOMMENDATIONS

Lead Author: Darrow Khosh-Chashm, M.D.
Co-Author(s): Ajay Parsaik, M.D., Roberto Gonzalez, M.D., Heng Nhoung, B.S., Anka Vujanovic, Ph.D.

SUMMARY:

Background: As the U.S. grows increasingly more linguistically and culturally diverse, there is a substantial body of evidence emerging that language barriers are impeding our ability to provide Hispanic limited proficiency (LEP) patients with high-quality patient-centered care. The proof of this is well-documented, but few studies have looked into enhancing existing communication methods such as telephone interpreting. This literature review aims to review research studies that have investigated telephone interpretation and from this to create draft recommendations for providers using telephone interpreters. **Methods:** The information presented in this report was gathered through searches on the topic of telephonic interpretation and LEP patients. The search consisted of literature searches, Internet searches and phone conversations with experts in the field. Keywords used to conduct this search included Latinos, Hispanics, Mexicans/Mexican Americans, LEP, mental health care and service use, utilization, and telephonic interpretation. Additionally, other publications were identified by reviewing the reference sections of articles already found. **Results:** A total of five studies met our inclusion criteria. These studies reported on satisfaction rates among providers, patients and interpreters when using bilingual providers, in-person interpreting, ad-hoc interpreting and remote video conferencing. Patients were most satisfied with bilingual providers and in-person interpreters over telephone interpreters. Providers reported a preference for in-person interpretation versus

telephone interpretation, with many citing poor audio quality and a lack of visual communication as the main reasons. Interpreters reported a preference for in-person interpreting in situations where establishing rapport was needed. **Conclusion:** Our draft recommendations provide practical guidance and fill an important gap in the literature. To our knowledge, this is the first set of recommendations that pertain specifically to telephone interpreting with Hispanic LEP patients. If followed, they should help mental health providers communicate more effectively when using a phone interpreter.

NO. 80

IMPACT OF SUBSTANCE ABUSE DISCHARGE RECOMMENDATION COMPLIANCE ON ED READMISSION RATE IN A COLLEGE POPULATION

Lead Author: Derek Blevins, M.D.
Co-Author(s): Surbhi Khanna, M.B.B.S., Diana Robinson, M.D., Priyanka Vakkalanka, Sc.M., Nassima Ait-Daoud, M.D., Christopher P. Holstege, M.D.

SUMMARY:
Substance misuse continues to be a significant problem facing college campuses nationwide. As in previous years, the 2013 SAMHSA data showed a higher rate of current alcohol use (59.4%), binge drinking (39%) and heavy drinking (12.7%) amongst full-time college students ages 18 – 22 compared to their peers (50.6%, 33.4% and 9.3%, respectively), with males being more likely to binge and heavy drink than their female counterparts. Illicit substance use amongst full-time college students is similar to that of their peers (22.3% versus 23% respectively), with higher prevalence rates amongst males than females, and higher rates amongst whites, followed by Hispanics, Blacks and then Asians. The estimates for the prevalence of current alcohol use, binge drinking and heavy drinking in college age students all exceed those estimates in the general population (ages 12 and up) by 6.7%, 16% and 6.5%, respectively. This indicates that nearly twice as many college students are engaging in heavy drinking compared to the general population. Similarly, the prevalence of current illicit drug use in the college population was more than twice that of the general population (10.2%). We have previously shown, in our own epidemiological study representing a cohort of undergraduate students at the University of Virginia who presented to the university hospital emergency department (ED), that a significant number of these visits were related to alcohol, illicit substance or pharmaceutical drug abuse. Thirteen percent (13%) of these undergraduates were seen either solely or in part due to substance misuse. By chart review, we also looked at the referrals these students were given on discharge and found that the majority (70%) were referred back to University Student Health, which has a Division of Counseling and Psychological Services, or CAPS. For many, the ED represents a unique opportunity to speak to a health care provider about substance abuse and receive education, an appropriate referral and even a brief intervention. ED studies of both injured and noninjured patients have found alcohol- or drug-related ED visits to be predictive of future ED admissions with similar presentations. We therefore reanalyzed our data on our student population to determine the prevalence of students with repeated ED visits related to substance misuse. This allows us to possibly identify a subgroup of particularly high-risk college-aged substance abusers, as well as determine if these individuals received adequate follow-up after any of their substance-related ED visits and any potential association between adequate follow-up and ED readmission. We will conclude with a discussion of considerations for referrals from the ED for this high-risk population.

NO. 81

IMPACT OF THE AFFORDABLE CARE ACT ON PSYCHIATRIC PATIENTS' ACCESS TO CARE AT A CALIFORNIA UNIVERSITY HOSPITAL EMERGENCY ROOM

Lead Author: Andia H. Turner, B.Sc.
Co-Author(s): Alexis A. Seegan, Deena S. McRae

SUMMARY:
Prior to implementation of the Affordable Care Act (ACA), an estimated 20% of adults with psychiatric illness in California lacked health insurance. When the ACA went into effect on January 1, 2014, California chose to expand Medi-Cal, California's Medicaid program, increasing coverage to over 250,000 low-income adults with mental illness. While large numbers of patients with psychiatric illnesses have gained insurance coverage through the ACA, the number of providers and hospital beds in the state has not grown along with the number of persons seeking care. Over 84% of emergency room physicians in the U.S. report that psychiatric patients are being "boarded" in their emergency department due to difficulty obtaining appropriate care. This study will examine the impact of ACA

implementation on the volume and types of insurance coverage of psychiatric patients visiting the emergency department at the University of California, Irvine, located in Orange, California. Additionally, this study will compare the number of hours spent in the ER by psychiatric patients with private insurance, public insurance and no insurance to highlight the continued barriers faced by low-income persons seeking psychiatric care.

NO. 82

LONG-TERM INJECTABLE USE AND PSYCHIATRIC READMISSION RATES AT A STATE SAFETY NET HOSPITAL

Lead Author: William Levitt, M.D.
Co-Author(s): Tymaz Adel, M.D., Parveen Gill, M.D.

SUMMARY:

Repeat hospitalization of psychiatric patients is one of the greatest problems facing psychiatrists and their psychotic patients. Poor insight and judgment, resulting in treatment refusal and the use of oral medications upon discharge from the hospital, has resulted in repeat hospitalizations costing hundreds of millions of dollars. In 2012, nearly one-fourth of adults in the United States experienced some form of mental or substance use disorder, with schizophrenia being one of the most frequent diagnoses. In that same year, schizophrenia alone accrued aggregate inpatient hospital costs of $3.1 billion and was responsible for a readmission rate of 18.6% within 30 days. This project investigates the average time before repeat psychiatric hospitalization for those on long-term injectables and discovers the best methods for maintenance of psychiatric health to minimize repeat hospitalization and the progression of psychiatric illness. Noncompliance secondary to inadequate clinical response is an important factor to consider when comparing the efficacy of oral antipsychotics vs. long-acting injectables (LAIs) in reducing readmission rates. Research also suggests that relapse is not always driven by noncompliance. Issues that must be addressed are accessibility to medications, the effect of cultural/racial differences in perceptions of LAI use among patients and the importance of educating patients on the difference between depot and emergency injections. Addressing these factors may lead to increased patient adherence if appropriately addressed. Evidence regarding the potential advantages of LAIs has been mixed, particularly with regard to overall efficacy of reducing readmission rates and decreasing hospital costs. Observational data on newer, second-generation LAI antipsychotic medications have also been limited given their more recent regulatory approval and availability. Our research aims to provide data from a community-based setting with access to a wide patient diversity, an abundant patient population and a high rate of psychiatric readmissions in order to help clarify the role of LAIs in the effective management of psychiatric illness.

NO. 83

COMFORT LEVEL AND BARRIERS TO THE APPROPRIATE USE OF CLOZAPINE FOR PATIENTS WITH SCHIZOPHRENIC DISORDERS AMONG U.S. PSYCHIATRIC RESIDENTS: A PROPOSAL

Lead Author: Balwinder Singh, M.D., M.S.
Co-Author(s): Andrew Hughes, B.S., James L. Roerig, Pharm.D.

SUMMARY:

Background: Treatment-resistant schizophrenia (TRS) affects 20% – 30% of all patients diagnosed with schizophrenia spectrum disorders. Clozapine is the recommend treatment for TRS; however, physicians' prescribing practices reveal that only a small portion of patients with TRS are treated as such. In fact, the use of clozapine in the United States has declined from 11% in 1999 to 5% in 2002. Prior surveys of mental health providers have identified multiple causes for underutilization of clozapine, notably prescribers' limited knowledge, lack of experience and significant discomfort with clozapine's side effect profile. However, no previous survey has been conducted to assess U.S. psychiatric residents' level of comfort in appropriately prescribing clozapine. **Objective:** The purpose of this study is to assess the comfort levels and barriers to appropriate use of clozapine by psychiatric residents and fellows in the treatment of patients with schizophrenia/schizoaffective disorders among the Accreditation Council for Graduate Medical Examination (ACGME)-affiliated residency programs. **Methods:** A cross-sectional investigation will be performed using an online survey, which will be sent to resident physicians in ACGME-affiliated U.S. psychiatry programs. The survey includes questions of demographics, clozapine prescription practices, comfort levels with prescription and perceived barriers to prescription. The survey will be closed three weeks after sending the survey to the resident-fellow members. **Results:** At the completion of this study, we will be able to identify current clozapine prescription practices among U.S.

psychiatric residents and fellows. This survey will also provide insight into specific reasons for clozapine prescription hesitancy and may indicate whether current patterns of use are due to a lack of clozapine-related educational opportunities in residency programs. This information could provide evidence to encourage U.S. residencies to make hands-on clozapine training feasible.

NO. 84

LITERATURE REVIEW OF EFFECTS OF ATYPICAL ANTIPSYCHOTICS ON INFANTS OF BREASTFEEDING MOTHERS

Lead Author: Tapan Parikh, M.D., M.P.H.
Co-Author(s): Dharmendra Goyal, M.D., E. Vanessa Spearman, M.D.

SUMMARY:

Antipsychotic drugs are often prescribed to treat psychiatric symptoms in the postpartum period. These drugs could be secreted into breastmilk. The safety of antipsychotics that are secreted into breastmilk or have the potential to be secreted into breastmilk is often not known to the prescriber. It is important for normal infant development to receive breastmilk. We conducted a literature search using PubMed and PsycINFO to determine safety of atypical antipsychotics during the postpartum period in mothers who breastfeed their infants. This literature search is the latest as of September 15, 2015. The search terms included "[antipsychotic name] and breastfeeding" as well as "breastfeeding and antipsychotics" in multiple combinations. The search was restricted to humans and MeSH terms. We did not restrict the search based on indications for which symptoms the searched antipsychotic might have been used; the usages largely included psychotic disorders such as schizophrenia and bipolar disorders, for which atypical antipsychotics might have been used. We also indicated the type of literature that is available in the following major findings that were available as a result of our literature search: 1) Aripiprazole (five case reports available in total) is secreted, but no significant dangers to infants were found; lower production of breastmilk itself in mothers and neonatal somnolence are reported as some possibilities per some literature; 2) Sedation, decreased suckling, restlessness, irritability, seizures and cardiovascular instability with clozapine (five case reports available in total) were noted; 3) Olanzapine (one prospective study, one case series and nine case reports available) may lead to somnolence, irritability, tremor and infant insomnia, and close monitoring is recommended; 4) Quetiapine (seven case reports and six case series available) and risperidone (three case reports available) are considered safe to infants, but caution is recommended; 5) No literature is available for asenapine, iloperidone, lurasidone, paliperidone and ziprasidone. Interestingly, we also noted some recommendations that may help reduce any negative effects on infants. Close clinical monitoring of infants is highly recommended. One study suggested discarding breastmilk for a certain duration (e.g., eight hours) after daily doses of antipsychotics in order to reduce the risk to infants; however, this study included only one case, and larger studies would be of significant help in this direction. Formula feeding is also less preferred but a viable option if mothers opt for it. It is also important to weigh clinical benefits of treating psychosis in mothers versus risks to infants, as treating mothers for underlying psychiatric condition might be necessary. In sum, the literature on this topic is very limited, and safety data remains to be largely unstudied in a sample size that could be considered statistically inferential as well as clinically relevant.

NO. 85

MINDFULNESS-BASED COGNITIVE THERAPY FOR MAJOR DEPRESSIVE DISORDER

Lead Author: Jeannie Lochhead, M.D.
Co-Author(s): Nelson M., Hazen J., Tieu R., Novac A., Bota R.G.

SUMMARY:

Background: Mindfulness-based cognitive therapy (MBCT) is a group based, manualized program aimed to teach skills that will reduce the recurrence of depressive symptoms. The program is designed to teach how to recognize physical sensations, feelings and thoughts that are associated with depression relapse. It is based on the theory that returning to previous automatic thoughts and behaviors associated with depression will result in recurrence of depressive symptoms. It allows people to become aware and create strategies for how to cope with these distressing thoughts, feelings and sensations. **Methods:** A cohort of patients completed mindfulness-based cognitive therapy (MBCT) group sessions between January 1, 2010 and December 31, 2013. Patients who completed MBCT were separated into two groups: those who had two or more episodes of Major Depressive Disorder (MDD) and all others. We compared the mean differences

in drug treatments and hospital utilizations between the MDD and non-MDD group. Statistical Analysis: The sample was described using means with standard deviations or medians with interquartile regions for continuous variables. For discrete variables, percentages and counts were used. The p-values were obtained using Fisher test for proportions and Wilcoxon for continuous variables. Wald p-values and 95% CIs were obtained for both adjusted and unadjusted estimated mean differences. Covariates adjusted for were age at start of MBCT, gender and race/ethnicity. **Results:** The final sample consisted of 142 patients (93 MDD and 49 others). The patients with MDD had, on average, 6.5 visits (all specialties), fewer one year after the MCBT than before ($p < 0.0068$). Specifically, there were four psychiatric contacts, fewer in the year following the MCBT ($p < 0.0026$). However, there were no differences in the number of hospitalizations, emergency room visits or specialties visits in the MDD group before or after the MCBT. There was no significant difference in the effect of MBCT on medication changes between MDD patients and nonMDD patients. MDD patients who participated in MBCT experienced a larger reduction in calls and visits compared to nonMDD patients ($p=0.0065$). The reduction in psychiatric calls, visits and specialists visits was not significantly greater in MDD patients compared to nonMDD patients ($p=0.0634$). **Discussion:** This study evaluated the effectiveness of MBCT to reduce the need for additional psychiatric services. It evaluated patients who received MBCT over three years, and demonstrated that it decreased the need of care regardless of medication changes. It raises the question of whether MBCT allows patients to respond to situations more skillfully or if MBCT itself decreases depressive symptoms. The limitations of this study include a small sample size, patient selection and design as a retrospective study. This study does have implications as a treatment strategy that may be generalized to other clinics and patient populations.

NO. 86

RELATIONSHIP BETWEEN ASD AND FXS REGIONAL EXPRESSION OF FMR1 MRNAS IN THE BRAINS OF WILD TYPE AND FMR1 NULL MICE

Lead Author: Jun Zhong, M.D.
Co-Author(s): Chunhui Yang, M.D., Guoqiang Xing, M.D.

SUMMARY:

Studies showed fragile X syndrome (FXS) is the most common known single-gene cause of Autism Spectrum Disorder (ASD). It is known that 46%of males and 16%of females with FXS have been diagnosed or treated for ASD. Irregularities in the brain structures, such as in the amygdala and cerebellum, have been observed. These abnormalities occur during prenatal development. Absence of the Fmr1 gene product (fragile X mental retardation protein [FMRP]) results in fragile X syndrome, an inherited form of mental retardation. FMRPs have functioned as RNA-binding, polyribosomal association and nucleocytoplasmic shuttling. In a knockout mouse model of fragile X syndrome (Fmr1 null), we have demonstrated regionally selective effects on cerebral metabolic rates for glucose (rCMRglc) and rates of cerebral protein synthesis. In the present study, we asked if there is a relationship between brain regions most vulnerable to the effects of the absence of FMRP in the Fmr1 null mouse and if the distribution is consistent with the irregularities in the autistic brain. We also asked if there is a difference between males and females in the regional distributions and the levels of the FXR mRNAs. We used 35S-labeled probes specific for the mRNAs to perform in situ hybridization on brains from male (n=4) and female (n=4) mice at 6 months of age. Following hybridization, brain sections were exposed to X-ray film, and optical density was measured in 9 brain regions on autoradiograms of sections hybridized to the probe. The highest levels of expression we observed were in the granular layers of the hippocampus and cerebellum. Levels of expression were also high in CA1 pyramidal cells of hippocampus, amygdala and granule layers of the olfactory bulb. We found intermediate levels in the anterior hypothalamus and in the cingulate and frontal cortexes. Low levels of expression were found in the thalamus and caudate. The distribution for the probe was similar in male and female mice, but we found a tendency for male mice to have higher levels than females.

NO. 87

EFFECTS OF CHILDHOOD ADVERSITY AND ADULTHOOD TRAUMA ON C-REACTIVE PROTEIN IN THE HEALTH AND RETIREMENT STUDY

Lead Author: Joy E. Lin, B.S.
Co-Author(s): Aoife O'Donovan, Ph.D.

SUMMARY:

Mounting evidence highlights specific forms of psychological stress as risk factors for ill health. Particularly strong evidence indicates that childhood adversity and adulthood trauma exposure increase risk for physical and psychiatric disorders, and there is emerging evidence that inflammation may play a key role in these relationships. In a population-based sample from the Health and Retirement Study (n=11,198), we examine whether childhood adversity, adulthood trauma and their interaction contribute to elevated levels of the systemic inflammatory marker high sensitivity C-reactive protein (hsCRP). All models were adjusted for birth year, gender, race, education and year of data collection. Both the presence of one or more childhood adversities and the total number of adverse childhood events were significantly associated with elevated levels of hsCRP, after adjustment for adulthood trauma (β=0.02, p=0.02 and β=0.03, p=0.01, respectively). Similarly, both the presence of one or more adulthood traumas and the total number of adulthood traumas were significantly associated with elevated levels of hsCRP, after adjustment for childhood trauma (β=0.03, p=0.002 and β=0.05, p <0.001, respectively). Those who had been exposed to both childhood adversity and adulthood trauma had significantly higher levels of hsCRP than those with neither childhood adversity nor adulthood trauma (Estimate=-0.15, 95% CI [-0.08, -0.21], p <0.001) and compared to those with adulthood trauma alone (Estimate=-0.06, 95% CI [-0.003, -0.12], p=0.04). However, although participants with childhood adversity and adulthood trauma had higher levels of hsCRP than those with childhood adversity alone, there were no significant differences in levels of hsCRP between these two groups (Estimate=-0.06, 95% CI [0.03, -0.16], p=0.19). There was no interaction between childhood and adulthood trauma exposure. These findings were robust to adjustment for acute inflammation and adverse health behaviors. To our knowledge, this is the first study to examine the relationship between adulthood trauma exposure and inflammation in a large population-based sample, the first to determine if childhood adversity and adulthood trauma are independently associated with elevated inflammation, and the first to explore the interaction between childhood adversity and adulthood trauma. Our study reports an independent, dose-dependent effect of childhood adversity and adulthood trauma on inflammation and highlights the importance of early life experiences in influencing of the effects of adulthood trauma on inflammation.

NO. 88

THE *DSM-5*-DEFINED ATTENUATED PSYCHOSIS SYNDROME AND CONVERSION TO SCHIZOPHRENIA SPECTRUM DISORDERS: AN INSTITUTION-WIDE RETROSPECTIVE REVIEW

Lead Author: Zachary D. Zuschlag, D.O.
Co-Author(s): Alyssa Kennedy, M.D., Laura Franko-Tobin, B.S., Jeff Korte, Ph.D., Karen Hartwell, M.D., Mark Hamner, M.D.

SUMMARY:

Schizophrenia is one of the most severe and debilitating diseases in all of psychiatry. Due to the severity of the illness and often subpar response to interventions, recent research has focused on prodromal psychosis: those individuals affected by psychotic symptoms who are active but are currently below the threshold of full-scale psychotic disorders. With the advent of a new volume of the DSM, a proposal was made to add a diagnosis of prodromal psychosis to the *DSM-5*, termed the attenuated psychosis syndrome (APS). Although it was decided not to include the APS in the body of the *DSM-5*, it was included in Section III: Conditions for Further Study. This inclusion has prompted an increasing awareness of prodromal psychosis, with a continually expanding research base. However, to date, the research on prodromal psychosis has focused on individuals identified by clinicians conducting structured interviews and making the diagnosis based on the results of specialized clinician rating scales. To the authors' knowledge, there are currently no published research studies specifically using the *DSM-5* criteria for the APS to identify these at risk individuals and then monitor their conversion rates to full scale schizophrenia spectrum disorders over a period of time. Our study aimed to meet this need by utilizing a retrospective chart review to analyze a "real world" population of help-seeking individuals, identify those with prodromal psychosis as defined by the *DSM-5* criteria for the attenuated psychosis syndrome, monitor their conversion rates to full-scale schizophrenia spectrum disorders over a period of three years and compare the conversion rates to previously published conversion rates from studies utilizing structured interviews/specialized rating scales. In addition, a number of covariates were added to the basic APS criteria to examine if their inclusion increased the rates of conversion to schizophrenia and related disorders. Our results

showed that, of the 152 individuals meeting APS criteria, 43.4% converted to schizophrenia spectrum disorders at a period between two and three years following their initial diagnosis of APS. Comparing our results to previously published rates of conversion, a z-test for two population proportions yielded a z-score=1.8408 with a p-value=0.06576 at the three year mark, indicating that there was no significant difference and supporting our initial hypothesis that the *DSM-5* definition of APS would predict conversion at a rate analogous to structured interviews/specialized rating scales. In addition, three covariates significantly increased the rates of conversion when added to the basic APS criteria: cannabis use, lack of previous axis I diagnosis and lack of previous treatment with antipsychotic medications. Our results suggest that the *DSM-5* definition of APS does indeed have potential clinical utility for identifying prodromal individuals and predicting their conversion to schizophrenia spectrum disorders.

NO. 89

SERUM BDNF, TNFÎ‘, IL-2, IL-6 AND IL-8 CHANGES AND CORRELATION IN SCHIZOPHRENIA PATIENTS

Lead Author: Hanjing E. Wu, M.D., Ph.D.
Co-Author(s): Zachary J. Sullivan, D.O., Xiang Zhang, M.D., Ph.D.

SUMMARY:

Objective: At the conclusion of the session, the participant should be able to: 1) Learn about the BDNF and cytokine changes in schizophrenia patients compared to healthy controls; 2) Correlate the change of BDNF with the change of cytokines in schizophrenia patients; and 3) Appreciate the correlation of BDNF to cytokines with depressive symptoms and cognitive function in schizophrenia patients. **Background:** Numerous studies report that abnormalities in both brain-derived neurotrophic factor (BDNF) and cytokines may be involved in the pathophysiology of schizophrenia. While recent studies have shown that immunocytokines interact with BDNF, the possible interaction between BDNF and cytokines and their role in the psychopathology of schizophrenia have not been reported. **Methods:** We have analyzed serum BDNF, tumor necrosis factor-alpha (TNFα), interleukin (IL)-2, IL-6 and IL-8 levels from the blood samples of 92 chronically medicated schizophrenia patients and 60 healthy controls. The symptoms of schizophrenia were assessed using the Positive and Negative Syndrome Scale (PANSS) with cognitive and depressive factors derived from the five-factor model of the PANSS. **Results:** Compared to the control group, the schizophrenia patients' samples have significantly decreased levels of BDNF and TNFα, but significantly increased levels of IL-2, IL-6 and IL-8. In patients, but not in controls, we observed a significant negative correlation between BDNF and IL-2 and between BDNF and IL-8. Furthermore, the negative correlation between BDNF and IL-8 was associated with the PANSS depressive factor, while decreased levels of BDNF and TNFα were associated with the PANSS cognitive factor. **Conclusion:** The decreased level of BDNF and change of immunocytokines level may be implicated in the pathophysiology of chronic schizophrenia. Moreover, immunocytokines may interact with BNDF in schizophrenia, which may contribute to the clinical symptoms and cognitive impairment of schizophrenia.

NO. 90

TRANS-CRANIAL MAGNETIC STIMULATION (TMS) IN PSYCHIATRY: REVIEW OF CURRENT UPDATES AND FUTURE DIRECTIONS

Lead Author: Ramkrishna D. Makani, M.D., M.P.H.
Co-Author(s): Madhusmita Sahoo, M.D., Tapan Parikh, M.D., M.P.H., Basant Pradhan, M.D.

SUMMARY:

Background: Since its inception in 1985, TMS has come a long way. It has been used in the field of neurology as both a diagnostic and a therapeutic tool. Fairly recently, its use in the field of psychiatry has grown, as evidenced by its FDA approval for treatment of pharmacotherapy resistant depression in 2008. Here we present a literature review on the current status of TMS in psychiatry, its limitations and future directions with some relevant modifications in the technological as well as methodological aspects of this innovative modality of treatment, which may help increase its scope and utility in psychiatry. **Methods:** Articles including randomized controlled trials, classical articles, and meta-analysis from single- and multi-center sites were retrieved online from PubMed, PsycINFO, Psychiatry Online and Cochrane Library using medical subject heading (MeSH) terms transcranial magnetic stimulation, depression, bipolar depression, pregnancy, ADHD, neurobiology of TMS, addiction, PTSD and treatment parameters with years ranging from 1990 to 2015. **Results:** Based on current literature, most robust evidence favored use of TMS in the treatment of both acute and maintenance phases of major depression. Though

inconclusive, current data suggest that TMS has a promising therapeutic role in bipolar depression, PTSD, positive symptoms of schizophrenia, addiction, ADHD and autism spectrum disorders. The exact neurobiological aspect of TMS is not yet clear, but neuroplasticity modulated by glutamate and GABA has been proposed as the final common pathway to explain its therapeutic effects. TMS has been consistently proven to be safe not only in adults but also in adolescents, elderly and pregnant women. The most commonly reported side effects are headache, scalp discomfort and very rarely seizure. Being free from ionizing radiation, it has no adverse effect on a developing fetus or on neurodevelopment of infants and toddlers. **Conclusion:** TMS has an ongoing diagnostic as well as therapeutic role in the field of psychiatry. Existing research has some limitations such as the nature of studies that largely consist of case repots, case series, open label studies with small sample size and lack of use of homogenous treatment parameters with very few randomized controlled trials. More replication in future studies that could address these lacunae is long overdue. Unlike ECT, patients undergoing TMS treatment stay awake and alert; thus, the session can be combined with other standard or research treatment modalities like pharmacological (ketamine, lithium, other potent antidepressants) as well as psychological (CBT, interpersonal therapy, mindfulness-based cognitive therapy). In addition, combining TMS with other neurophysiological measures of brain activity like EEG, PET and MRS could shed further light on its therapeutic and diagnostic utility in psychiatric disorders. Thus, TMS has a long way to be explored to its full potential.

NO. 91

A STUDY ON THE AWARENESS, UTILITY AND BARRIERS TO THE UTILIZATION OF PSYCHIATRIC ADVANCED DIRECTIVES

Lead Author: Tanuja Gandhi, M.D.
Co-Author(s): Dr. Richard Jaffe, M.D., Dr. Priyankar Sarkar, M.D., Dr. Lakshit Jain, M.D.

SUMMARY:

Background: Psychiatric advanced directives (PADs) are legal documents that allow patients with severe mental illness, when well, to document their preferences for psychiatric care or appoint a surrogate decision maker for use during an incapacitating psychiatric crisis. Historically, the Federal Patient Self Determination Act addressed the rights of health care utilizers (including mental health) to detail, in advance, how they would like to be treated by health care providers in the event that they are incapacitated. These wishes could be expressed in an advance directive or by appointing a health care proxy. As of 2007, 25 states had passed laws defining PADs, while 46 states have some form of advanced directives for psychiatric treatment, although there do exist state-specific variations. In general, PADs include information on a choice of treatment facility, medications, administration of electroconvulsive therapy and participation in experimental studies or drug trials. Patients may also include information on emergency contacts, their crisis symptoms, relapse factors, protective factors and instructions to staff on the use of seclusion and restraints. **Methods:** Eligible participants identified based on the inclusion and exclusion criteria will be administered the research survey by a member of the research team. After the survey, interested participants will be given printed material on PADs with a toll-free contact number to obtain further assistance with the same. In addition to analyzing the survey results for descriptive data, the results will also be analyzed to examine a correlation between the number of involuntary hospitalizations and interest in obtaining or utilizing psychiatric advanced directives. **Discussion:** The instructions on PAD forms aid in developing a better understanding of the patient's needs during a crises as, most often, clinicians have access to very limited information in emergencies. Furthermore, as chronic mentally ill patients may not be well equipped for self-advocacy or utilization of community resources, PADs might help in empowering patients through the formulation of a collaborative treatment plan. Interestingly, despite evidence of a high interest in PADs, the rate of utilization or implementation is not as high. There exist potential barriers at various levels, ranging from the formulation and obtaining of PADs to legal and ethical concerns. Thus, through this study we, aim to examine the level of awareness about the availability of PADs and identify potential barriers to their utilization. **Conclusion:** By understanding the level of awareness about PADs and the potential barriers to their utilization, health care providers could educate their patients about PADs in a more effective manner. Providers will also be able to identify and address some modifiable barriers to the utilization of PADs and devise comprehensive after-care plans addressing the same.

NO. 92

EVIDENCE FOR USING ACETYLCHOLINESTERASE INHIBITORS AND MEMANTINE IN INDIVIDUALS WITH TRAUMATIC BRAIN INJURY (TBI): A SYSTEMATIC REVIEW

Lead Author: Rajesh R. Tampi, M.D., M.S.
Co-Author(s): Oladele M. Oladapo, M.D., Sujan Barua, M.D., Silpa Balachandran, M.D., Esha Sharma, M.D.

SUMMARY:

Objective: The aim of this systematic review is to identify published randomized controlled trials (RCTs) that evaluate the use of acetylcholinesterase inhibitors and memantine in patients with traumatic brain injury (TBI). **Methods:** A literature search was conducted using PubMed, MEDLINE, EMBASE, PsycINFO and Cochrane collaboration databases for RCTs in any language that evaluated the use of acetylcholinesterase inhibitors and memantine in individuals with TBI without restriction on date of publication using keywords acetylcholinesterase inhibitors, memantine and TBI. **Results:** A total of 74 abstracts were found, of which four met the predefined search criteria. Three of these studies showed statistically significant improvement in neurocognitive testing with the use of acetylcholinesterase inhibitors (rivastigmine, donepezil and physostigmine) in individuals with TBI (with age, sex, type of injury and severity of TBI not affecting the response) as compared to a placebo. One study showed no statistically significant improvement in neurocognitive testing with the use of rivastigmine as compared to a placebo. However, in a subgroup of individuals with moderate to severe memory impairment, there was statistical significance on neuropsychological tests, functioning and quality of life. In all four studies, acetylcholinesterase inhibitors were well tolerated with minimal gastrointestinal side effects noted. We did not find any RCTs on the use of memantine with TBI. **Conclusion:** Current evidence, although limited, does suggest efficacy for the use of acetylcholinesterase inhibitors for the symptomatic improvement in cognition in individuals with TBI, and the drug is well tolerated.

NO. 93

THE EFFECT OF SOCIAL NETWORKING SITES ON THE RELATIONSHIP BETWEEN PERCEIVED SOCIAL SUPPORT AND DEPRESSION

Lead Author: Matthew A. McDougall, M.D.
Co-Author(s): Michael Walsh, M.D., Kristina Wattier, M.D., Lindsey Knoll, M.D., Michalene Stevermer, D.O., Ryan Knigge, L.P.C., M.S., Bruce S. Fogas, Ph.D.

SUMMARY:

Background: The effect of social networking sites (SNSs) on depression remains uncertain. This study examined whether SNSs have a negative moderator effect on the established relationship between perceived social support and depression in inpatient psychiatric patients. **Methods:** Survey instruments assessing for depression, perceived social support and SNS use were filled out by 301 inpatient psychiatric patients. Additional data on age, gender and primary psychiatric diagnosis were collected. Surveys were collected between February 2014 and January 2015. A step-wise multiple regression analysis was performed to determine significant interactions. **Results:** There was no significant influence of SNS use on the relationship between perceived social support and depression, when measured by Social Media Use Integration Scale (SMUIS) scores (r^2=0.125, p=0.539) or by hours of SNS use per day (r^2=0.157, p=0.687). There was a significant negative relationship between perceived social support and depression (β=-0.323, p=0.000) and a significant positive relationship between hours of SNS use per day and depression, measured by Beck Depression Inventory-II (BDI-II) scores (r^2=0.156, p=0.002). The mean BDI-II score was 27.6 (SD=13). Average hours of SNS use per day were 3.5 (SD=4.3). **Discussion:** Limitations include generalizability, recall bias and SNS measurement. This is the first study to look at SNS use and depression in inpatient psychiatric patients. SNS use did not affect perceived social support or the protective relationship between perceived social support and depression. Hours of SNS use per day were correlated with depression scores. Future studies between SNS use and depression should include quantification of daily SNS use.

NO. 94

EVIDENCE FOR USING ELECTROCONVULSIVE THERAPY IN INDIVIDUALS WITH DEMENTIA: A SYSTEMATIC REVIEW

Lead Author: Rajesh R. Tampi, M.D., M.S.
Co-Author(s): Anil K. Bachu, M.D., Silpa Balachandran, M.D., Rabeea Mansoor, M.D., Sujan Barua, M.D., Billy Zou, B.S.

SUMMARY:

Objective: The objective of this study is to conduct a systematic review of the literature on evaluating the efficacy and tolerability of electroconvulsive therapy in individuals with dementia. **Methods:** We conducted a systematic search of five major databases including PubMed, Medline, PsychInfo, Embase and Cochrane collaboration with "ECT" and "Dementia" as our search terms. There were no time or language restrictions placed on the selection of the studies. However, we only used studies that were published in English or had an official English translation in our final review. **Results:** A total of 134 published articles were identified using our search strategy. Of these, only 28 articles were deemed eligible for a full-text review. Of the 28 articles, 20 were case reports, five were case series and three were retrospective chart reviews. We did not identify any randomized controlled trials (RCT) for the use of ECT in individuals with dementia. A total of eight articles evaluated the use of ECT in individuals with dementia and depressive symptoms. Seven articles evaluated the use of ECT in individuals having agitation and aggression in dementia. Two articles each evaluated the use of ECT in individuals with dementia who had psychotic features, catatonic symptoms, and yelling and screaming. One article identified the use of ECT for an individual who has manic symptoms. A total of six articles that evaluated in use of ECT in individuals with dementia looked at one or more behavioral symptoms. All of the studies under review reported symptomatic benefits in individuals with dementia. We found that, on average, 4 – 8 sessions of ECT were used in these studies. The majority of studies reported significant side effects with the use of ECT including cardiovascular and neurological adverse effects. **Conclusion:** Available evidence from this systematic review indicates that there are no RCTs for the use of ECT in individuals with dementia. Current evidence from 28 nonrandomized studies reported symptomatic benefits from ECT for a variety of symptoms in individuals with dementia, including depression, mania, yelling and screaming, agitation, and a combination of these symptoms. Despite showing symptomatic benefit, a majority of the studies also indicate that the use of ECT results in significant adverse effects, namely cardiovascular and neurological effects in these individuals. It can be summarized that data from this systematic review indicates that ECT may be beneficial in certain individuals with dementia and behavioral symptoms, but significant adverse events may limit its use in these vulnerable individuals.

NO. 95

EFFICACY OF PRAZOSIN IN POST-TRAUMATIC STRESS DISORDER: A SYSTEMATIC REVIEW AND META-ANALYSIS

Lead Author: Balwinder Singh, M.D., M.S.
Co-Author(s): Andrew J. Hughes, B.Sc., Patricia J. Erwin, M.L.S., Ajay K. Parsaik, M.D., M.S.

SUMMARY:

Background: There is some evidence that prazosin may help in post-traumatic stress disorder (PTSD) recovery. **Objective:** To consolidate the evidence from the literature to evaluate the role of prazosin in the treatment of PTSD. **Methods:** Major databases, including PubMed, EMBASE, Cochrane, Psychinfo and Scopus, were searched through August 2015 for studies reporting the role of prazosin in the treatment of PTSD. Only randomized controlled trials including patients with PTSD comparing prazosin to a placebo or control group were included in the meta-analysis. We calculated standardized mean differences (SMDs) with standard error (SE) for each study included in the meta-analysis. A random effect model was used to calculate the pooled SMDs and 95% confidence interval (CI). Heterogeneity was assessed using Cochran's Q test and chi-square statistic. **Results:** Of 402 screened articles, six studies enrolling 280 subjects (80% male) with PTSD were included in the systematic review, and five studies enrolling 230 subjects were included in the meta-analysis. The meta-analysis showed significant improvement in nightmares (SMD 1.01, 95% CI 0.72, 1.30), overall PTSD symptoms (SMD 0.77, 95% CI 0.48, 1.06) and clinical global improvement (SMD 0.94, 95% CI 0.6, 1.29) among patients with PTSD receiving prazosin as compared to those who received a placebo/control. Prazosin improved sleep quality (SMD 0.87, 95% CI 0.55, 1.19), dream content, total sleep time (mean difference 82.54 min, 95% CI 50.15, 114.93) and hyperarousal symptoms (SMD 1.04, 95% CI 0.23, 1.84) in PTSD subjects. Prazosin did help with difficulty falling or staying asleep, but the effect could not reach statistical significance (p=0.08), possibly due to the limited number of studies. Prazosin did not improve re-experiencing/intrusion and avoidance symptoms. No or minimal heterogeneity was observed between the studies for majority outcomes. Side effects were minor and comparable between the prazosin and placebo groups. **Conclusion:** This study suggests that prazosin is effective in treating nightmares, overall PTSD symptoms and sleep disturbances, including

hyperarousal. It improves total sleep time and sleep quality and is well-tolerated with minimal side effects.

NO. 96
WITHDRAWN

NO. 97
EARLY LIFE TRAUMA IN HOSPITALIZED MOOD DISORDER PATIENTS AND ITS ASSOCIATION WITH CLINICAL OUTCOMES

Lead Author: Ajay Parsaik, M.D., M.S.
Co-Author(s): Noha AbdelGawad, M.D., Jigar Chotalia, M.D., M.P.H., Scott Lane, Ph.D., Teresa A. Pigott, M.D.

SUMMARY:
Background: The prevalence of childhood trauma and its impact on clinical outcomes in hospitalized psychiatric patients is unknown. We studied frequency of childhood general, physical, emotional and sexual trauma in adults hospitalized for mood disorders and its relationship to different clinical outcomes. **Methods:** 167 subjects admitted to an academic hospital between July 1 and December 31, 2014 for mood disorders (*DSM-IV-TR* criteria) completed the short form of the Early Trauma Inventory – Self-Report (ETI-SR). The ETI-SR-SF consists of 27 items about general trauma and physical, emotional and sexual abuse. Baseline demographics and clinical outcomes were collected from electronic medical records. Disability was measured by the Sheehan Disability Scale, which is a three-item self-completion scale measuring the impact of symptomatology on work, social and family functioning. The Clinician-Rated Dimensions of Psychosis Symptom Severity Scale was used to measure symptom severity at admission. Continuous variables were compared by independent sample t-tests and categorical variables by chi-square tests. A linear regression model was used to examine the relationship between the ETI-SR-SF and clinical outcomes. **Results:** 167 patients (Caucasian 53%, African American 34%, Hispanic 10%, Asian 2%, others 1%) had a mean age of 35±11.5 years; 10% were married, and 53% were males. 56% had bipolar disorder, 24% had depressive disorder, 15% had schizoaffective disorder and 5% had substance-induced mood disorder. 64% also had ≥1 substance abuse disorder, while 22% had ≥3 substance abuse disorders. The majority (73 %) were unemployed and 58% had ≤12 years' education. 67% were admitted involuntarily; mean hospital stay was 7.5±3.7 days, and 6% were readmitted within 30 days. All patients reported ≥1 type of childhood trauma, 90% reported ≥1 general trauma, 75% reported ≥1 physical abuse, 71% reported ≥1 emotional abuse, 49% reported ≥1 sexual abuse and 35% reported all four types of abuse before the age of 18. 52% also reported intense fear, horror or helplessness, and 35% had out-of-body experiences or feelings of being in a dream due to trauma. Abuse subtypes did not differ by gender and race. A higher ETISR-SF score was associated with longer hospital stay (OR 1.13, 95% CI 1.05 – 1.22), more severe symptoms (OR 1.13, 95% CI 1.01 – 1.27), and higher disruption of work /school (OR 1.12, 95%CI, 1.04 – 1.21), social (OR 1.14, 95% CI 1.06 – 1.22) and family lives (OR 1.09, 95% CI 1.02 – 1.17). **Conclusion:** All patients admitted for mood disorders reported childhood trauma. The majority reported general, physical or emotional abuse, while half reported sexual abuse. These preliminary results suggest that early life trauma is associated with longer hospitalization, more severe symptoms, and greater disruption of school, work, social and family lives. Early recognition of trauma and trauma-related therapeutic interventions may improve outcomes in this population.

NO. 98
USE OF NICOTINE REPLACEMENT AMONG PSYCHIATRIC INPATIENTS TREATED WITH CLOZAPINE VERSUS OTHER ANTIPSYCHOTIC DRUGS

Lead Author: Maryam Jahdi, M.D., M.P.H.
Co-Author(s): Hossam Guirgis, M.D., Anne-Marie Duchemin, M.D.

SUMMARY:
Ninety percent of patients with schizophrenia smoke. Smoking status has implications for patients both because smoking may induce P450 enzymes, thereby increasing the metabolism of certain medications, and places this already vulnerable population at higher risk of cardiovascular and respiratory diseases and various malignancies. A small number of studies suggest that antipsychotics influence smoking in patients with schizophrenia. One antipsychotic, clozapine, was reported to reduce smoking in this population, but data were obtained either in a small number of patients or observed only among heavy smokers. Other atypical antipsychotics may increase craving for nicotine, and mixed data have been reported with first generation antipsychotics. Possible mechanisms for antipsychotic effects on nicotine use and dependence may depend on their ability to induce

indirect acetylcholine release, their direct activity on the nicotinic receptor or activity on the reward system through dopamine receptors. There is no systematic study of the effects of antipsychotics on tobacco use or smoking cessation in schizophrenia patients; this information would be valuable to help determine if various antipsychotics have different effects. Following implementation of a total tobacco ban—including outdoor smoking—at a large academic medical center, nicotine replacement is prescribed as part of the treatment regimen for psychiatric inpatients presenting with nicotine abuse/dependence. Due to strict enforcement of the smoking ban policy, none of the inpatients can access tobacco, making smoking cessation controlled during the hospital stay and measures of nicotine levels unnecessary to confirm compliance. We hypothesize that the need for nicotine replacement therapy and the number of prescriptions distributed during a patient's stay can be used as an index of smoking and nicotine craving among inpatients. Comparing how different types of antipsychotic medications affect the prevalence of smoking and the need for nicotine replacement among inpatients with schizophrenia may provide information on the possible differential effects of various antipsychotics on nicotine abuse and dependence. In addition to their efficacy profile on positive and negative symptoms, the effect of antipsychotics on smoking behavior and nicotine craving may guide choice of pharmacotherapy for patients with schizophrenia.

NO. 99

REEL COMFORT: A PILOT STUDY OF THE THERAPEUTIC EFFECT OF FACILITATED FILM SCREENINGS AND DISCUSSIONS ON GENERAL PSYCHIATRIC INPATIENTS

Lead Author: Phillip Gregoire, M.Sc.
Co-Author(s): Elysse Leonard, M.A., Anna Skorzewska, M.D.

SUMMARY:

Objective: To understand the impact of a collaborative cinematherapy program on patient experience in a general psychiatric inpatient unit. **Methods:** This mixed-methods pilot study investigated the impact of a single-session, community agency-supported cinematherapy program (Reel Comfort) in a general inpatient psychiatric setting. The Reel Comfort program was created as a joint effort between the psychiatric unit clinical team and the Toronto International Film Festival, Inc. (TIFF). During each session, patients viewed a selected film and participated in a facilitated discussion afterward. A survey was designed to incorporate Likert-style, nominal scale and free-response questions to assess the patients' emotional experiences during the program and their perceptions of the effects of the program on their experience in the inpatient unit. The survey was offered to all patients following participation in the program. **Results:** 100 surveys were returned, and descriptive statistical and thematic analyses were performed on the responses. The investigators derived three significant thematic categories from the responses: interpersonal relationships, intervention description, and personal experience. Within the interpersonal relationships category, patients noted social contexts and relationships in the films and social engagement as participants in the program. Intervention descriptions focused notably on humor as a valuable experiential trait of the screenings. The personal experience category revealed references to patient diagnoses, experiences with hospitalization, alleviation of boredom, and identification of film subjects with the patients' lived experience. The quantitative results indicated that patients had positive feelings about the program, with 73% of respondents indicating that they enjoyed the program "a lot," 25% "a little" and 2% "not at all." The results (n=100) also showed significant increases in the percentage of patients who identified themselves as "happy" (83%) and "fine" (24%) and decreases in the percentage of patients who identified themselves as "worried/anxious" (-76%), "sad" (-56%), and "angry" (-100%) between the beginning and end of the sessions. Patients described the program on a Likert scale (1 – 4) as providing an improvement to their concentration (3.5±0.5, n=93), distraction from personal problems (3.3±1.0, n=96) and comfort with others (3.3±0.8, n=89). Fewer patients found that the program helped with their self-esteem (2.8±1.5, n=90). **Conclusion:** The results from this study indicate that a single facilitated cinematherapy session may result in short-term improvements to patient mood, satisfaction with hospitalization, relief from personal problems, and improved communication and socialization with others in the psychiatric unit. This pilot study motivates further research in the growing field of cinematherapy and novel techniques that have been introduced to the program since these data were collected.

NO. 100

5-HTTLPR ASSOCIATION WITH CHILDHOOD CHARACTERISTICS IN MOOD DISORDER

Lead Author: Tae Kyung Eun, M.D.
Co-Author(s): Seong Hoon Jeong, Kyu Young Lee, Se Hyun Kim, Yong Min Ahn, Yang Weon Bang, Eun-Jeong Joo

SUMMARY:
Background: There is a significant diagnostic overlap between childhood bipolar disorder (BPD) and attention deficit hyperactivity disorder (ADHD). Furthermore, it has been suggested that the features of childhood ADHD are significantly associated with adult mood disorders. It is possible that genetic factors common to both ADHD and mood disorders, such as the serotonin transporter gene, underlie the association between these two phenotypes. Thus, the present study aimed to determine whether a genetic role may be played by the serotonin transporter-linked polymorphic region (5-HTTLPR) in the childhood ADHD features of adult patients with mood disorders. Methods: The present study included 232 patients with major depressive disorder (MDD), 154 patients with BPD and 1,288 normal controls. All diagnoses were made based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (*DSM-IV*), and childhood ADHD features were assessed with the Korean version of the Wender Utah Rating Scale (WURS-K). The total score and the scores of three factors (impulsivity, inattention and mood instability) from the WURS-K were analyzed to determine whether they were associated with the 5-HTTLPR genotype. These three factors were extracted from previous studies conducted by our research group. **Results:** In the BPD II group, the 5-HTTLPR genotype was significantly associated with the total score (p=0.029) and the impulsivity factor (p=0.004) on the WURS-K. However, the inattention and mood instability factors were not associated with the 5-HTTLPR genotype, and the MDD and normal control groups did not exhibit any significant associations between the WURS-K scores and the 5-HTTLPR genotype. **Discussion:** The present findings suggest that the 5-HTTLPR genotype may play a role in the impulsivity component of childhood ADHD in patients with BPD II. However, because the present study used a small sample size and did not find any genetic associations between the 5-HTTLPR genotype and childhood ADHD features in other types of mood disorders, 5-HTTLPR may not represent a very strong genetic factor, and other genes likely contribute to the phenotypic association between childhood ADHD features and adult mood disorders. Further studies investigating other candidate genes using a larger sample are warranted to more conclusively determine any common genetic links. **Keywords:** 5-HTTLPR, ADHD, Bipolar II Disorder, Childhood, Impulsivity, WURS-K

NO. 101

THE PSYCHIATRIC PERSPECTIVE: FACTORS AFFECTING MEDICAL STUDENTS' VIEW OF PSYCHIATRY

Lead Author: William Levitt, M.D.
Co-Author(s): Ethan Isidro, M.S..

SUMMARY:
Despite the increasing prevalence of mental illness worldwide, a majority of the mentally ill do not receive any form of care. While mental health is more openly accepted in the U.S., there is still a large need for psychiatrists. Studies have shown that there is a significant lack of interest in psychiatry among medical students, and fewer students consider psychiatry as a career choice compared to other specialties, ranking psychiatry significantly lower than other specialties in terms of job satisfaction, financial compensation and intellectual challenge. Students who are considering psychiatry as their first choice of specialty reportedly have had more than one month of clinical rotations in psychiatry and have either a friend or family member with a history of mental illness. However, positive interest does not always lead to choosing psychiatry as a specialty. A study found that although clinical exposure did positively impact attitudes toward psychiatry, this same correlation did not carry over to choosing psychiatry as a career. Some students are simply afraid to be associated with such a stigmatized profession, despite high interest. One of the main determinants that affect the decision against psychiatry as a career is the low status of psychiatry both within the medical field and in a public setting. This study will further explore the different factors affecting students' views on psychiatry found in previous studies, focusing more closely on the student experience during a psychiatry core rotation. Our goal is to conduct a prospective survey to evaluate students' perspectives about psychiatry and to determine if, how and why they change during a six-week psychiatric core for third-year medical students. Questionnaires will be given to approximately 10 – 20 students every six weeks, both before and after rotation. Aspects studied will include level of

psychiatric knowledge and exposure to mental illness in addition to reasons why a student may decide to pursue or not pursue a career in psychiatry—including financial compensation, perception, stigma and fear.

NO. 102

CLIMATE CHANGE AND MENTAL HEALTH: A NEED FOR INCREASED RESEARCH

Lead Author: Ekatherina Osman, D.O.

SUMMARY:

2015 is heading to be the hottest year on record, beating 2014 by a long shot. Scientific consensus is conclusive: not only is climate change happening, it's accelerating at an alarming rate. As this is being written, record wildfires in California have forced tens of thousands of evacuations, floods in Southeast Asia have devastated farmland and caused hundreds of deaths, and the arctic is melting at an unprecedented rate. Due to the increased number of natural disasters and inevitability of an increasingly unstable world, it is imperative to research the impacts on people's mental health in relation to the two. There is scarce literature connecting mental health and climate change, even though the anecdotal evidence abounds. New psychiatric disorders may even begin to appear due to the upcoming stressors of climate change, including a possible pretraumatic stress disorder. Recommendations: future avenues of research may include impacts of repetitive natural disasters on rates of depression, anxiety and/or psychosis. New modalities and/or therapies can specifically target and/or prevent mental health disorders in relation to climate change, particularly with children. Additionally, the rise of climate refugees is inevitable, as we are witnessing in regards to Syria. It has been illustrated that their plight was triggered by a record-breaking drought. The integration of these refugees, who will most likely not return back to their country for a long time to come, would be another avenue of research that could be addressed. May it be that we should require them to have mandatory psychological counseling to help with integration and reduce the chance of radicalization, for both the host countries' citizenry and the new arrivals? What will be the monetary impact for countries in regards to treating the uptick in mental health disorders? If psychiatrists see that their patient's well-being will inevitably be impacted by climate change, through proven research, is it imperative that we become activists and push for climate change legislation? We must acknowledge the enormity of the problem, research it, accept the inevitability of change and find the necessary interventions to help our patients and our planet.

NO. 103

A RANDOMIZED DOUBLE-BLIND CLINICAL TRIAL COMPARING QSYMIA (PHENTERMINE-TOPIRAMATE) VERSUS PLACEBO IN PATIENTS WITH BULIMIA AND BINGE EATING DISORDER

Lead Author: Shebani Sethi Dalai, M.D., M.S.

Co-Author(s): Sarah Adler, Psy.D., Natasha Fowler, B.S., Hannah Toyama, B.S., Courtney Crisp, B.S., Debra Safer, M.D.

SUMMARY:

Background: Bulimia nervosa (BN) and binge eating disorder (BED) are serious mental disorders associated with adverse psychological and physical consequences. Treatment options to date offer limited success, leaving at least 50 – 70% of patients still symptomatic after treatment. Pharmacotherapy options are few, with only one FDA-approved medication for bulimia (fluoxetine) and only one for binge eating disorder (the recently approved lisdexamfetamine, a Schedule II amphetamine). The purpose of this study is to evaluate the efficacy and safety of repurposing Qsymia, a medication FDA-approved for the treatment of obesity, in patients with bulimia and binge eating disorder. Prior clinical experience has shown positive results, but an important next step is to demonstrate efficacy in an adequately powered randomized double-blind clinical trial. **Objective:** To examine the effectiveness and safety of Qsymia (phentermine/topiramate) to treat moderate to severe binge eating disorder (BED). **Methods:** This is a randomized, double-blind, placebo-controlled crossover trial eight months in length with a minimum enrollment of 60 patients. Patients are randomized to placebo or study drug. The doses of Qsymia that will be used are the four standard doses that are FDA-approved. These doses are for phentermine/topiramate: 3.75mg/23mg, 7.5mg/46mg, 11.25mg/69mg and 15mg/92mg. The oral administration will follow a weekly titration increase, as tolerated. After three months of treatment with Qsymia or placebo, patients will undergo a two-week washout followed by crossover to either placebo or to Qsymia. All will then be followed for two months off of medications. Patients will be assessed. The primary outcome measure is to assess change in frequency of binge eating behaviors as measured by binge eating days per week. The

eating disorders examination (EDE) will be used as a measurement tool. Secondary outcome measures include the change in frequency of binge eating episodes and percent abstinence from binge eating. Safety assessments will include treatment-emergent adverse events, vital signs and changes in weight. **Results:** To be determined; study in progress.

NO. 104

GOOD COP, BAD COP, KILLER COP? A STUDY OF ANTISOCIAL PERSONALITY DISORDER IN POLICE OFFICERS

Lead Author: William Levitt, M.D.
Co-Author(s): Carmen Leung

SUMMARY:

Psychological evaluation and personality assessments, most commonly the Minnesota Multiphasic Personality Inventory (MMPI), are required by most large municipal police departments as a step to acceptance into a police academy, the goal of which is not only to weed out applicants whose personality type and behavior are unfitting for the job, but also to determine their ability to make quick decisions and sound judgements. However, with recent cases of police brutality and murders, it is clear that there are those in law enforcement who lack the proper empathy to safeguard the people they have sworn to protect. There are many theories as to why these individuals have been put into such a position of power, including the "rotten apple," "rotten barrel" and "police personality" theories. The "rotten apple" theory proposes that the MMPI is not perfect in selecting applicants, thus occasionally allowing an unsuitable candidate through, while the "rotten barrel" theory states that it is the stress of the working environment that promotes the deviant behavior. The "police personality" is a cluster of traits that consistently emerge with the police officer, including suspicion, cynicism, prejudice and distrust of the unusual. Studies have sought to determine whether these traits are already present in those who end up as police officers or are developed through the nature of the job, with conflicting results. Less studied is the prevalence and possible connection between those who join law enforcement and antisocial personality disorder. A literature review has shown that there is evidence of police officers with traits congruous to those in the antisocial personality disorder diagnosis, and a newer personality profiling test, the Personality Assessment Inventory (PAI), was able to predict problematic police performance. This study aims to show possible evidence of antisocial personality disorders within the police force through extensive literature review.

NO. 105

MEDICAL COMPLICATIONS ASSOCIATED WITH DELAYS IN PUBLIC GUARDIANSHIP ASSIGNMENT

Lead Author: Rebecca E. Goedken, M.D.

SUMMARY:

Objective: At the conclusion of the session, the participant should be able to: 1) Understand when it is appropriate and necessary to pursue public guardianship for a patient; 2) Appreciate the importance of obtaining a public guardian in a timely manner and the cost that may arise from avoidable delays in the process; and 3) Learn where delays commonly arise in public guardianship assignment and strategies to avoid such delays. **Background:** Patients who have been determined to lack the capacity to make medical decisions or safe dispositional decisions require a surrogate decision maker. Those without identifiable or able surrogates require a guardian assigned by the circuit court to help make decisions on the patient's behalf. Obtaining a public guardian can be a timely and complex process because it typically involves many different providers and also due to the need to ensure that a patient's autonomy is being respected, whenever possible. The purpose of this study is to first identify delays in the guardianship assignment process during inpatient hospitalizations at Northwestern Memorial Hospital and to then determine whether longer delays lead to worse outcomes in terms of medical complications and length of hospitalization. **Methods:** Forty-three patients hospitalized at Northwestern Memorial Hospital who, since 2013, had a public guardian assigned by the circuit court of Cook County were identified. Chart reviews were conducted for each of these patients to identify where avoidable delays in the guardianship assignment process occurred. These subjects were divided into two groups: those who had delays of more than one week and those in which the delays were less than one week. Average length of stay was assessed for each group, as well as medical complications that arose from hospitalization. Medical complications will be defined as medical problems that are not felt to relate to the patient's presenting problem or existing medical problems. **Conclusion:** Avoidable delays in public guardianship assignment at Northwestern

Memorial Hospital occur from multiple causes. The most common delays occurred from 1) Delayed decisions to pursue guardianship when there was clear evidence of necessity earlier in the hospitalization; 2) Delays in obtaining neuropsychological testing; 3) Miscommunication between different providers on the team; 4) Delays in filling out the CCP211 form, which is the physician's report specifying the nature and extent of the person's disabilities; and 5) Excessive delays in the search for surrogate decision makers. The group that had delays of more than one week resulted in a greater percentage of patients with medical complications during their hospitalization than the group with delays of less than one week.

NO. 106

COFFEE AND TEA TO PREVENT DEPRESSION?

Lead Author: Hanan Khairalla, M.D.
Co-Author(s): Rashi Aggarwal, M.D.

SUMMARY:

Background: Coffee and tea are two of the most commonly consumed beverages in the world. Existing studies on their impact on mental health, particularly on depression, are scarce and poorly understood. **Objective:** Our study aims to explore the potential effect of coffee and tea on the risk of depression. **Methods:** A literature search was completed by through a PubMed search on the keywords coffee, tea, caffeine, depression, dysthymia and major depressive disorder. We also cross-checked references cited in existing articles. The search was limited to English language publications and to studies conducted exclusively on humans. **Results:** A total of 37 articles met the criteria; three of which were large, well-designed, cohort studies. Almost all studies have shown an inverse association between coffee consumption and the risk of developing depression. Data were inconsistent in regards to attributing caffeine to this finding. Many studies suggested that other components in coffee, particularly antioxidants, may play a major role. The majority of the studies found no association between tea consumption and depression. **Conclusion:** Results suggest that higher consumption of coffee may confer protection against depression, whereas no association was found for tea. More studies are needed to understand the mechanism behind those findings. Our hope is to explore the potential of using coffee as an adjunct therapy for future treatment of depression.

NO. 107

FROM SNOW WHITE TO ELSA: A TRANSFORMATION OF THE DISNEY PRINCESS! HOW GENDER ROLE PORTRAYALS PRESENT IN DISNEY FILMS MAY INFLUENCE CHILDREN OVER TIME

Poster Presenter:Zeynep Ozinci, M.D.
Lead Author: Kalliopi S. Nissirios, M.D.

SUMMARY:

Throughout the years, several studies have addressed gender role portrayals in children's media. Disney films specifically have been known to reflect some stereotypical depictions of gender. Many young girls are exposed to various Disney princess images that may guide their creation of future self-images. Countless studies have been conducted on elementary school children between the ages of five to ten, or even younger, to address the effects of stereotypical Disney images in the media. Children certainly seem to be very conscious of gender portrayals. Consistently portrayed gender role images may be interpreted as "normal" by children and become connected with their concepts of socially acceptable behavior and morality. We would like to point out how female Disney characters over the years have been reflecting the true evolution of the female gender and how this may have an effect on children and their beliefs and ideas about gender, social behaviors and norms over time.

NO. 108

CHARACTERISTICS OF PAIN EXPRESSION IN CHILDREN ACROSS DEVELOPMENTAL STAGES

Lead Author: Jawad Zafar, D.O.
Co-Author(s): Carol Freas, M.D., Cristian Sirbu, Ph.D., Patrick L. Kerr, Ph.D., Eric Schneider, D.O., Kathleen Barber, James Turner, D.O., Carol Morreale, Pharm.D., John Mearns, D.O.

SUMMARY:

Background: Venipuncture is a routine part of clinical practice. In pediatric populations, venipuncture is also a common source of pain and distress. Suboptimal pain control during venipuncture in children can induce fear of venipuncture. Consequently, children may develop blood-injection injury phobia or fear of routine medical procedures involving venipuncture that can lead to delay or neglect of necessary health care (e.g., vaccinations, anesthesia, blood draws). Optimal pediatric pain management during

venipuncture requires an accurate understanding of the subjective experience and objective expression of pain across different childhood developmental stages. This study investigated differences in pain experience and expression associated with venipuncture in children. **Methods:** This study is a secondary analysis of data collected as part of a randomized controlled trial of the efficacy of two topical anesthetics (lidocaine patch and EMLA cream) during venipuncture in children ages 5 to 17. In all, 147 participants in three age groups completed the study: 5 – 7 years (n=32), 8 – 11 years (n=51) and 12 – 17 years (n=64). Subjective level of pain was assessed using the Faces Pain Scale-Revised (FPS-R). Expressed level of pain was assessed via parental assessment of the child's pain using the Observed Behavioral Response Scale (OBRS), which measured the number of pain-related behaviors that occurred before, during and after venipuncture. A blinded observer also provided OBRS ratings of the child's pain-related behaviors. ANOVA was conducted to identify significant differences in the self-report and observer-rated expression of pain between the three age groups. Post hoc tests of significant differences were conducted using Scheffe's test. **Results:** Omnibus tests revealed a main effect of age ($F(2,138)=7.46$; $p=0.008$). Level of pain did not differ by treatment group (active medication versus placebo; $p=0.24$). Post hoc analyses using Scheffe's test revealed that children in the 5 – 7 year age group reported significantly higher levels of pain than children in the 8 – 11 year ($p=0.006$) or the 12 – 17 year ($p=0.001$) age groups. Chi-square analyses revealed that a significantly higher proportion of children in the 5 – 7 year age group exhibited pain-related behaviors compared to the 8 – 11 and 12 – 17 year age groups ($ps<0.01$), while no significant differences were found between the 8 – 11 and 12 – 17 year age groups for proportion exhibiting pain-related behaviors. **Conclusion:** These data indicate that pain expression and subjective pain experience may be age-related, with children in early childhood expressing pain in different ways and at higher levels than those in middle childhood and adolescence. Children 5 – 7 years old expressed pain in more ways and reported higher levels of pain compared to children in the 8 – 10 and 12 – 17 year age groups. Relevant applications to clinical practice are discussed.

NO. 109

A CASE REPORT: SCHIZOPHRENIC PATIENT USING "SOUR DIESEL" TO TREAT HIS DEPRESSION

Lead Author: Rahulkumar Patel, M.D., M.B.B.S., M.P.H.
Co-Author(s): Ronak Patel, M.D., Luisa Gonzalez, M.D., Panagiota Korenis, M.D.

SUMMARY:
Sour Diesel, a strain of cannabis glorified for its pungent smell and euphoric effects, is a psychomimetic agent capable of inducing impairment of sensory perception. Simultaneously, literature review suggests such strains can alleviate anxiety and depression in various users. On the contrary, unwanted side effects including panic attacks, psychotic symptoms, impaired attention and concentration, and motor incoordination have been recognized. Here we present a case report of 41-year-old patient with a long history of schizophrenia and cannabis use who had previously used synthetic marijuana "K2" for several years and now has switched to smoking "Sour Diesel," which he claims has improved his depressive symptoms. The patient was admitted on the inpatient psychiatric unit due to depressive, paranoid and aggressive behavior in the context of noncompliance with his medication regimen. He reported feeling depressed, lonely and hopeless, which led him to using "Sour Diesel" because it made him feel "happy." He was treated with low dose selective serotonin reuptake inhibitors (SSRI) and a long-acting antipsychotic medication. His symptoms ameliorated, and the treatment team employed motivational interviewing techniques to assess his readiness to stop using Sour Diesel. He was educated about potential deleterious effects of his illicit drug use, coping strategies to maintain abstinence and methods to identify depressive symptoms. This case aims to bring awareness of the importance of eliciting a detailed assessment of underlying reasons for illicit drug use and discussion of strategies used on the inpatient service to provide patient education. **Keywords:** Schizophrenia, Sour Diesel

INTERNATIONAL POSTER SESSION 1

MAY 15, 2016

NO. 1

PREVALENCE OF EATING DISORDERS AMONG INDIVIDUALS WITH TYPE 1 DIABETES MELLITUS (T1DM) AND DIABETES-SPECIFIC EMOTIONAL DISTRESS

Lead Author: Ahmad Alhadi, M.D., M.B.B.S.

Co-Author(s): Asma I. Almohizea, May H. Alorainy, Nada S. Alouda, Sarah I. Alessa, Abdullah M. Alguwaihes

SUMMARY:
Background: Diabetes is a global public health issue. This is especially true for Saudi Arabia, where as many as 24% of the adult population is diabetic. Of those, approximately 5–10% are type 1 diabetics. Many studies have been conducted to establish a connection between T1DM and eating disorders. From our literature review, no published papers were found on the prevalence of eating disorder symptoms among type 1 diabetics in the Saudi community. **Objective:** 1) Determine the prevalence of eating disorders symptoms among individuals with T1DM at the University Diabetes Center; 2) Identify the age and gender of individuals with T1DM and disordered eating; 3) Compare the prevalence of disordered eating behavior between individuals with T1DM using continuous subcutaneous insulin infusion (CSII) and those on multiple daily injections (MDI); and 4) Correlate eating disorder symptoms with diabetes-specific emotional distress. **Methods:** A cross-sectional study was carried out at the University Diabetes Center of King Abdulaziz University Hospital in Riyadh with a sample size of 113 (males=49, females=64). Using a convenient sampling technique, participants filled a self-administered questionnaire with questions on demographics and standardized scales (EAT-26, DEPS and PAID). SPSS was used for analysis. **Results:** Overall prevalence rate of eating disorders symptoms was 45.54%, with females constituting the majority, and prevalence was not associated with BMI, HbA1c, gender or emotional burnout. 46.02% of our sample exhibited diabetes-specific eating disorders. 11–12% showed signs of insulin restriction (diabulimia). High DEPS scores were associated with male gender and higher HbA1c and BMI. CSII showed the lowest rates of diabetes-specific eating disorders. **Conclusion:** We recommend that future samples display greater variability in regards to age and BMI. Special attention should be given to both males and females in regards to eating disorders during their regular visits.

NO. 2

SMARTPHONE USE ADDICTIVE PHENOMENON AMONG UNIVERSITY STUDENTS IN KING SAUD UNIVERSITY IN RIYADH, SAUDI ARABIA

Lead Author: Fahad D. Alosaimi, M.D.

Co-Author(s): Haifa Alyahya, Hatem Alshahwan, Nawal Al Mahyijari, Shaffi Ahmed

SUMMARY:
Background: Smart phones are increasingly becoming a major part of our lives. Currently, there is neither a definite psychiatric view nor a diagnosis on this addictive-like behavior, such as established substance use disorders and gambling addiction. Our study investigated the prevalence of smart phone use addictive phenomenon among university students in Saudi Arabia and the potential risk factors for addiction phenomenon among this population, and it aims also to validate the Arabic version of the Problematic Use of Mobile Phone scale. **Methods:** An electronic self-administered questionnaire was developed and administered to all participants from King Saud University students in Riyadh, Saudi Arabia, in a cross-sectional manner during a six-month period from September 2014 to March 2015. It included four sections: socio-demographic, addiction risk factors, a validated Arabic version of the Problematic Use of Mobile Phone scale and general questions about consequences of mobile phone use. **Results:** 2,367 study subjects responded to our study questionnaire. 43.6% were male, 92.7% were Saudi Nationals, 50% were in age group 20 to 24, 83% of them were single, 82.1% used smart phones for ≥three years, 27.2% used them for > 8 hours/day, 39% ≤4 hours/day, 66.9% were using 4–8 applications daily. The 20-item Problematic Use of Smart Phone scale, which was assessed on a 5-point scale among the 2,367 subjects, yields a mean (sd.) of 60.8(14.9) with a minimum of 20 and maximum of 100. About 50% (1,183) of study subjects were having a median score ≥60. In assessment of consequences of use of smart phone, about 28.8% and 15.3% of subjects agree and strongly agree respectively that their lifestyle and academic achievement has been affected negatively. There are statistically significant positive correlations between the score of the Problematic Use of Smart Phone scale and the score of consequences of use of smart phone ($r=0.598$, $p<0.0001$) and with number of hours spent in use of a smart phone ($r=0.311$, $p<0.0001$). The stepwise multiple regression analysis shows a statistically significant positive relationship between the four study variables (score of consequences of use of smart phone, number of hours spent in a day to use smart phone, academic degree, and number of applications) and the

outcome variable “score of problematic use of smart phone."

NO. 3

THE PSYCHOSOCIAL CORRELATES OF INFERTILITY IN SAUDI ARABIA

Lead Author: Fahad D. Alosaimi, M.D.
Co-Author(s): Mujahid E. Bukhari, Maram H. Altuwirqi, Zeinab M. Abotalib, Saleh A. Binsaleh

SUMMARY:

Objective: To identify the frequency of major psychiatric disorders and the psychosocial characteristics of infertile couples in Saudi Arabia. **Methods:** This was a cross-sectional study of infertile patients (206 women and 200 men) attending infertility clinics in three referral hospitals in Riyadh, Saudi Arabia. A semi-structured questionnaire was developed to assemble socio-demographic, clinical and psychosocial variables. The approved Arabic version of The Mini-International Neuropsychiatric Interview (MINI) tool was used to assess 18 common psychiatric illnesses. **Results:** 39.5% of males and 47.1% of females reported they suffered psychosocial pressures because of delayed childbearing. The most prevalent stressor came from intrusive questions and advice from significant others. Males suffered more from intrusive questions and pressure to conceive, remarry or get divorced, while females were stressed more from psychological and emotional exhaustion, marital discord, attitudes by mothers-in-law or society and a persistent desire by husbands to have children. To cope with infertility, females engaged more in religious activities and spoke more to someone regarding their problems. To solve their infertility problems, 50% tried to find ways via the Internet, and 38.0% of males and 53% of females reported use of alternative medicines. 61% believed that delayed childbearing has a psychological reason, and 39% blamed supernatural reasons and visited faith healer clinics to treat infertility. Of the 200 men surveyed, only 4.5% self-reported they had been diagnosed to have a psychiatric disorder. Of the 206 women surveyed, only 10.2% reported they had a psychiatric disorder. However, using the MINI scale, psychiatric illness was documented in 30% of males and 36.9% of females. The most common diagnoses among both genders were depression, which was documented in 21.7% of patients, and anxiety, which was documented in 21.2% of patients. There were significantly more females who had suicidality and depression compared to males. On the other hand, there were significantly more males who had bipolar and substance-related disorders compared to females. Low monthly income among male and female study participants and polygamy only among female participants were significantly associated with a psychiatric disorder. Finally, compared to males, females wished more to have psychosocial support within the infertility centers. **Conclusion:** Patients with infertility in SA face multiple psychosocial stressors related to their infertility and cope differently based on gender- and culture-specific knowledge of infertility. There is a higher prevalence of psychiatric disorders, particularly depression and anxiety, among infertile men and women in Saudi Arabia associated with lower income and polygamy. This study sheds light on the importance of integrated care to alleviate the psychological burden for this unfortunate population.

NO. 4

THE EFFECT OF THOUGHT DISORDER ON REMISSION OF SYMPTOMS IN SCHIZOPHRENIA

Lead Author: Koksal Alptekin, M.D.
Co-Author(s): Berna Yalincetin, Halis Ulas, Tolga Binbay, Berna Binnur Akdede

SUMMARY:

Objective: Thought disorders in schizophrenia that deteriorate in acute episodes usually persist during the illness chronically in a vague form. Antipsychotic treatment reduces thought pathology associated with acute episodes of schizophrenia, but residual thought pathology continues even after remission has been attained. The aim of this study is to investigate the effect of thought disorder on the course of symptomatic remission in schizophrenia. **Methods:** The study was carried out with the sample consisting of 117 patients diagnosed with schizophrenia according to *DSM-IV*. Using remission criteria developed by the Andreasen group, 45 patients were evaluated as “remitted” and 72 patients as “not-remitted." The patients were assessed with the Positive and Negative Syndrome Scale (PANSS) and the Thought and Language Index (TLI). The Thought and Language Index is comprised of impoverishment of thought and disorganization of thought subscales. The impoverishment of thought category includes poverty of speech, weakening of goal and perseveration. The disorganization of thought category includes looseness, peculiar word use, peculiar sentence construction, peculiar logic and distractibility. **Results:** Logistic regression

analyses revealed that poverty of speech (odds ratio: 1.62, p=0.001) and peculiar logic (odds ratio: 1.58, p=0.04) contribute to the prediction of symptomatic remission in schizophrenia patients. Regarding the subscales, impoverishment of thought was found to be related to symptomatic remission (odds ratio: 1.48, p=0.001). **Conclusion:** These findings suggest that poverty of speech and peculiar logic may have specific associations with the course of symptomatic remission in schizophrenia. Impoverishment of thought might be a predictive factor rather than disorganization of thought in remission of symptoms, supporting the consideration of negative thought disorder as an indicator of clinical prognose.
Keywords: Schizophrenia, Thought Disorder, Symptomatic Remission

NO. 5

TREATMENT OPTIONS FOR SPITTING BEHAVIOR IN AN ADULT PATIENT WITH HISTORY OF CHRONIC SCHIZOPHRENIA AND PERVASIVE DEVELOPMENTAL DISORDER

Lead Author: Muhammad Asif, M.D.
Co-Author(s): Lara Addesso, M.D., Faiz Cheema, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Spitting behavior has been observed in children with pervasive developmental disorders, elderly demented patients demonstrating agitation or aggression, as a compulsion in patients with Obsessive Compulsive Disorder (OCD), as a tic in Tourette's patients, and as a seizure manifestation in temporal lobe epilepsy. 1) Understanding the cause or purpose of spitting behavior can vary among different mental illnesses. One study investigated the repetitive behaviors in OCD and Gilles de la Tourette (GTS), considering OCD and GTS share obsessive-compulsive phenomena. Each repetitive action or thought was assessed for goal-directedness and presence of anxiety. Results of the behavior analysis were then categorized into subgroups of obsession, impulsion or compulsion. Factor analysis indicated three factors responsible for approximately 44% variance, resulting in an impulsive factor related to GTS, an obsessive factor related to tic-free OCD, and compulsive behavior in OCD. Overall, more OCD patients reported more anxiety-driven and goal-oriented behavior than the GTS patients. 2) With distinction between different factors associated with certain repetitive behaviors, a predominant illness can be accounted for. By focusing on the predominant illness, more accurate treatment protocols can be practiced. **Objective:** This study was undertaken in order to obtain an optimum psychopharmacological treatment for spitting behavior. Further investigation was performed in an attempt to derive accurate etiology of such behavior. **Case:** We report a case of a 36-year-old Turkish female with past psychiatric history of Schizophrenia, Paranoid type; Obsessive Compulsive Disorder; Pervasive Developmental Disorder (unconfirmed); and Tourette's Syndrome, presenting to Bergen Regional Medical Center due to increasingly assaultive behavior. Her assaultive behavior consisted of physical aggression towards her family members and spitting in their faces and on multiple objects. The patient also reported auditory and visual hallucinations, which were difficult to ascertain due to the patient's selective mutism. **Conclusion:** The behavior of repetitive spitting lacks adequate research and standard treatment protocol. In order to treat this behavior, true etiology due to principal mental illness must be elucidated. Understanding the nature of spitting behavior and emotions associated with it can potentially lead to an optimum treatment.

NO. 6

RECURRING CATATONIA IN SCHIZOPHRENIA FOLLOWING ACUTE ECT: A CASE REPORT AND REVIEW

Lead Author: Muhammad Asif, M.D.
Co-Author(s): Jonathan J. Gapp, M.S., Shrey Shah, M.D., M.S., Asghar Hossain, M.D.

SUMMARY:

Objective: A consensus on a standardized approach to treatment of catatonia in the setting of schizophrenia has yet to be reached. We report a patient's failure of acute ECT treatment as evidence that M-ECT may have a place in the development of a standardized treatment in catatonic schizophrenia. **Methods:** We present a case of a 24-year-old male with a history of schizoaffective disorder with catatonia who was initially treated successfully with acute ECT. With following neuroleptic treatment, the patient experienced relapse three year later. RESULTS AND **Conclusion:** The patient initially responded to acute ECT treatment but ultimately relapsed without further treatments. We believe that acute ECT is often insufficient, and the value of M-ECT should be recognized and therefore become a more accessible treatment for those with catatonic schizophrenia.

NO. 7
WITHDRAWN

NO. 8
PRE- AND PERINATAL EXPOSURES AND RISK OF AUTISM SPECTRUM DISORDERS
Lead Author: Yael Barnea, M.D., LL.B.
Co-Author(s): Avi Reichenberg, Ph.D., Raz Gross, M.D., M.P.H.

SUMMARY:
Background: Autism is a chronic neurodevelopmental disorder characterized by social and language impairments and stereotyped repetitive patterns of behavior. Prevalence rates of autism spectrum disorders (ASD) have increased markedly worldwide, including Israel. While most plausible neurodevelopmental theories of autism focus predominantly on genetic factors, data from epidemiological studies emphasize the importance of nongenetic risk factors for autism. **Objective:** To summarize current knowledge of nongenetic, pre- and perinatal risk factors for autism based on findings from epidemiological studies, as well as on our original research through iCARE, The International Collaboration for Autism Research in Epidemiology. **Methods:** Published findings from epidemiological studies were collected by searching MEDLINE and by screening major journals likely to publish epidemiological studies on this topic. The studies needed to meet the following requirements: a well-defined sample of cases drawn for population-based registers or cohorts; standardized, prospectively collected obstetric information from birth records or registers; comparison subjects drawn from the general population; and a standardized format for presentation of data on individual obstetric complications. Selected findings from iCARE projects will be highlighted. **Results:** Various parental characteristics, in-utero exposure to certain medications and environmental pollutants, and obstetric conditions appear to be associated with an elevated risk of ASD. For instance, advancing paternal and maternal age and parental age difference have all been associated with increased risk for ASD. Several obstetric conditions, including low birth weight, preterm birth, maternal metabolic conditions, low Apgar score, fetal distress during labor, birth induction and augmentation, and caesarean section, are also associated, at least in some studies, with increased risk of ASD. **Conclusion:** Findings from epidemiological studies suggest that exposure to several pre- and perinatal risk factors may increase risk of ASD. Identifying modifiable risk factors for autism has important public health and clinical implications, especially in view of the dramatic increase in reported prevalence of autism. Given the inconsistency across studies and populations for some results and the plausibility of additional yet unrecognized risk factors, larger epidemiological, population-based birth cohort studies are of particular importance.

NO. 9
CASE REPORT OF AN ACUTE PSYCHOSIS EPISODE INDUCED BY EMERGING CATHINONE-LIKE DESIGNER DRUG AVAILABLE ON INTERNET
Lead Author: Hafid Belhadj-Tahar, M.D., Ph.D.
Co-Author(s): Nouredine Sadeg, Ph.D., Marc Passamar, M.D.

SUMMARY:
The use of designer drugs commonly marketed as “Bath Salts” has dramatically risen in recent years. Several different synthetic cathinone derivatives have been identified in these products, including methylenedioxypyrovalerone (MDPV). Such designer drugs are available on the Internet and thus become more and more popular among young adults. Such synthetic drugs could also be used as chemical submission agents for criminal or delictual purposes, mainly drug-facilitated sexual assault. Fatalities and cases of aggressive behavior, even cannibalism, have been recently reported in the media. However, these cases have been poorly documented. Indeed, the detection of these substances requires specific analyses such gas or liquid chromatography combined with mass spectrometry and so is not systematically realized in psychiatric departments. In this presentation, we report a case of a cathinone-like designer drug leading to an intoxication psychosis. **Case:** In June 2012, “Mr M.,” a 47-year-old man, was admitted in the psychiatric emergency department for behavioral changes with delirious thoughts and psychomotor agitation. He suffered an acute episode of delirium with both persecution and megalomaniac themes. The patient was oriented in space and time. Standard blood analysis was normal. The initial urinalysis based on immunology colorimetric assay did not detect any toxic, including amphetamine and ecstasy. Analyses of patient’s serum by gas chromatography-mass spectrometry detected the presence of two synthetic cathinone derivatives: methylenedioxypyrovalerone (MDPV) and pentylone (PV). Psychiatrists decided a forced admission to a psychiatric unit. Agitation decreased

a few hours later, after an antipsychotic (loxapine) and benzodiazepine (diazepam) sedation. The following day, delirious thoughts had completely disappeared and began to be criticized by the patient. He was then quite sensitive to the sedation treatment so that clinicians quickly stopped it. Anamnesis revealed that psychotic episodes occurred after a consumption of a 500 mg dose of NRG 3 purchased from a UK-based website called “Energy 3" (NRG 3: composed by mixture of MDPV and PV). **Discussion:** NRG 3 is used as a psychostimulant and antidepressant. Intoxication by cathinone-like drugs causes brief psychotic episodes characterized by a sudden onset, short lasting with a quick disappearance after substance withdrawal, the polymorphic themes and mechanisms of delirious thoughts, and a psychomotor agitation. After analysis by GC-MS, the presence of MDPV was detected in the patient’s serum during one of this episode. **Conclusion:** This clinical case shows the psychiatric effects of an emerging cathinone-like designer drug available on the Internet, called NRG 3. Given the growing number of cases of described in the literature, clinicians should be aware of this phenomenon. The screening of these substances requires a strong collaboration between clinicians and toxicologists.

NO. 10

ASSOCIATIONS OF ETHNIC DISCRIMINATION WITH SYMPTOMS OF DEPRESSION AND ANXIETY AMONG HISPANIC EMERGING ADULTS: A MODERATED MEDIATION MODEL

Lead Author: Miguel Ã□ngel Cano, Ph.D., M.P.H.
Co-Author(s): Yessenia Castro, Marcel A. de Dios, Seth J. Schwartz, Elma I. Lorenzo-Blanco, Angelica M. Roncancio, Diana M. Sheehan, Rehab Auf, Brandy PiÃ±a-Watson, Bryon L. Zamboanga, Que-Lam Huynh

SUMMARY:

Background: Emerging adulthood is a developmental stage (spanning ages 18 to 25) that is often marked as a time of transition that presents with elevated symptoms of depression and anxiety. In addition to normative stressors associated with this developmental stage, Hispanic emerging adults may also face the added burden of cultural stressors such as ethnic discrimination, which may increase the levels of affective symptoms. However, studies on mutable mechanisms linking discrimination with symptoms of depression and anxiety are limited. As such, the present study aimed to test explanatory models to (a) examine if self-esteem mediated associations of discrimination with symptoms of depression and anxiety and (b) examine if gender moderated the indirect effects (via self-esteem) of discrimination with depression and anxiety symptoms. **Methods:** Two moderated-mediation models were conducted on cross-sectional data from a national collaborative study that included 1,004 Hispanic emerging adults. Participants completed a confidential online survey that included the Center for Epidemiological Studies Depression Scale, Beck Anxiety Inventory, Rosenberg Self-Esteem Scale, Scale of Ethnic Experience and a demographic questionnaire. **Results:** Respective models accounted for 26% of the variability in depressive symptoms and 27% of the variability in anxiety symptoms. Results indicated that higher levels of discrimination were directly associated with higher depression ($\beta = .06$, $p = .02$) and anxiety ($\beta = .06$, $p = .04$) symptoms and lower self-esteem ($\beta = -.30$, $p < .001$). Higher self-esteem was directly associated with lower depression ($\beta = -.49$, $p < .001$) and anxiety ($\beta = -.53$, $p < .001$) symptoms. Conditional indirect effects indicated that discrimination had statistically significant indirect effects on symptoms of depression and anxiety via self-esteem for both men and women. However, the indirect effect on depression symptoms was stronger among men ($\beta = .15$, 95% CI [.08, .23]) than women ($\beta = .05$, 95% CI [.01, .08]). Similarly, the indirect effect on anxiety symptoms was stronger among men ($\beta = .16$, 95% CI [.08, .24]) compared to women, ($\beta = .05$, 95% CI [.01, .09]). The index of moderated-mediation suggested that the difference in the indirect effects between men and women was statistically significant in both models. **Conclusion:** Findings are of public health significance because they provide some evidence that ethnic discrimination is a social determinant associated with elevated symptoms of depression and anxiety among Hispanics. The findings may also be of clinical relevance because they suggest that among men (compared to women), self-esteem was a stronger mediator of discrimination in relation to symptoms of depression and anxiety. Therefore, it may be of benefit to design and implement gender-specific interventions to offset the effects of discrimination on Hispanic emerging adults.

NO. 11

THE HARM: THE DEVELOPMENT OF A NIMBLE VIOLENCE RISK ASSESSMENT TOOL

Lead Author: Gary Chaimowitz, M.D., M.B.

SUMMARY:
The assessment of risk of violence and self-harm have become critical skills required of mental health professionals, particularly those working in forensic settings. Although a number of measures exist that assist in predicting risk in the long term, there are few tools that offer assistance with short-term risk. Aggression and violence are issues faced by most mental health facilities, but the discussion of inpatient risk assessment and management is rarely had in psychiatric literature. This paper will discuss the implementation of the Hamilton Anatomy of Risk Management (HARM): a tool developed at St Joseph's Health care, Hamilton. Because aggression is often viewed as an expected occurrence in an inpatient setting, not only is documentation of incidents poor, but the discussion of risk and risk-related factors also tends to be limited. The HARM assesses risk in both in- and outpatient settings. The HARM is a practical method of not only evaluating a patient's risk of violence but also serves to guide treatment planning and risk management, including privilege determination. The HARM has been in use for several years. This paper will present an adaptation of the HARM tool that allows for innovative data entry, data output, and chart production, as well as incorporating an educational component. An automated risk management tool such as this will allow for improved quality of care and improved safety for patients and staff.

NO. 12

LIFETIME OBESITY AND DIABETES ASSOCIATED WITH CARDIOVASCLAR DISEASES IN OLD-AGE BIPOLAR DISORDER: A 30-YEAR RETROSPECTIVE CASE-CONTROL STUDY IN TAIWAN

Lead Author: Pao-Huan Chen, M.D.
Co-Author(s): Chi-Kang Chang, M.D., Yen-Kuang Lin, Ph.D., Shuo-Ju Chiang, M.D., Ph.D., Shang-Ying Tsai, M.D.

SUMMARY:
Background: Patients with bipolar disorder over middle age have a significantly higher prevalence rate of cardiovascular morbidity than the general population. The well-known risk factors for cardiovascular diseases are mostly associated with metabolic dysregulations and include obesity, diabetes mellitus and hyperlipidemia. However, reports on the metabolic risk across life span in bipolar patients having cardiovascular diseases still remain limited. **Methods:** Patients with bipolar I disorder (*DSM-IV*) aged over 56 years old and admitted to one psychiatric center in Taiwan between 2006 and 2014 were enrolled. Clinical data of each subject, including sociodemographic information, psychiatric clinical features, physical diseases and results of physical and laboratory examinations, were obtained by retrospectively reviewing medical records. Patients receiving the diagnosis and treatment of cardiovascular diseases (ICD 401–429) during the last period of psychiatric hospitalization were assigned to the case group. Each case was then matched with one control patient without cardiovascular diseases for the age and sex. Prevalence of metabolic morbidities across life span was compared between the case and control groups. **Results:** We totally recruited 52 cases and 52 controls at mean age of 61.5 + 5.0 years old in this study. The mean age at onset of bipolar disorder was 31.2 + 10.9 years old for the case group and 35.8 + 11.5 years old for the control group (p=0.040). As compared with control subjects, subjects in the case group had significantly higher comorbid rates of obesity between age 31 and 55 (25.0% vs. 7.7%, p=0.017) and after age 56 (50.0% vs. 21.6%, p=0.003) and diabetes mellitus between age 31 and 55 (32.7% vs. 13.5%, p=0.020) and after age 56 (50.0% vs. 28.8%, p=0.027), but not hyperlipidemia between age 31 and 55 (28.8% vs. 23.1%, p=0.502) or after age 56 (38.5% vs. 40.4%, p=0.841). Multiple logistic regression analysis showed that, after adjusting for the bipolar onset age, obesity after age 56 provided the greatest predictive validity for cardiovascular diseases in patients with bipolar disorder (95% CI for odds ratio (OR)=1.06–6.87, p=0.038). **Conclusion:** Obesity is the major metabolic morbidity contributing to cardiovascular diseases in patients with bipolar disorder across their lifespan. Diabetes mellitus might be an additional one. Early and continuous control of body weight is therefore highly suggested for this at-high-risk patient group.

NO. 13

INCREASED RISK OF HYPERLIPIDEMIA IN PATIENTS WITH ANXIETY DISORDERS: A POPULATION-BASED STUDY

Lead Author: I-Chia Chien, M.D., Ph.D.
Co-Author(s): Ching-Heng Lin

SUMMARY:
Objective: We designed this study to examine the prevalence of hyperlipidemia and risk factors in patients with anxiety disorders. **Methods:** The National Health Research Institute provided a

database of 1,000,000 random subjects for study. We obtained a random sample of 766,427 subjects aged ≥18 years in 2005. Those study subjects who had at least two service claims during this year for either ambulatory or inpatient care with a diagnosis of anxiety disorders were identified. Those study subjects with a primary or secondary diagnosis of hyperlidemia (ICD-9-CM: 272.0, 272.1, 272.2, 272.3 or 272.4) or with antihyperlipidemia drug treatment in 2005 were identified. The differences in the prevalence of hypertension between patients with anxiety disorders and the general population in 2005 were tested by multiple logistic regression adjusted for the other covariates, including age, sex, insurance amount, region and urbanicity. **Results:** The prevalence of hyperlipidemia in patients with anxiety disorders was higher than that in the general population (21.3% vs. 7.6%, odds ratio, 2.14; 95% confidence interval, 2.07–2.22) in 2005. Compared with the general population, patients with anxiety disorders had a higher prevalence of hyperlipidemia in all age sex groups, insurance amount, region and urbanicity. **Conclusion:** Patients with anxiety disorders had a higher prevalence of hyperlipidemia than the general population. Age, antipsychotic use, mood stabilizer use, diabetes, hypertension and urbanicity were risk factors for hyperlipidemia in patients with anxiety disorders.

NO. 14

ARE MEDICAL DOCTORS EDUCATED RESEARCH CONSUMERS?

Lead Author: Priscilla N. Chukwueke, M.D., M.P.H.
Co-Author(s): Akerele, E.

SUMMARY:

Background: Statistical literacy is defined as basic competency in understanding health statistics. The purpose of this study is to objectively explore statistical competence of medical doctors and outline the recommended approaches from the reviewed documents, including ways to improve research and statistical literacy amongst medical doctors. **Methods:** The PubMed database was searched for related peer-reviewed literature published between 2006 and 2014 and a book review. **Results:** The literature review showed that the majority of medical doctors are statistically illiterate and do not receive adequate statistical teaching while in training. **Discussion:** Evidenced-based medicine is the way to go in this technological age when patients go online and educate themselves before coming to see the doctor, and if the doctor cannot answer the patients' questions about efficacy of treatment or risk factors based on appropriate interpretation of research or statistical data, it becomes the case of "blind leading the blind." Also, there will be missed opportunities for effective risk communication and misguided critical decision making, the consequences of which may sometimes be dire.

NO. 15

MARCHIAFAVA-BIGNAMI DISEASE (MBD) AND DIFFUSION TENSOR IMAGE (DTI) TRACTOGRAPHY

Lead Author: Priscilla N. Chukwueke, M.D., M.P.H.
Co-Author(s): Anne Kleiman, M.D., Leszek Pisinski, M.D.

SUMMARY:

Marchiafava-Bignami Disease (MBD) is a rare central nervous system (CNS) disease characterized by demyelination of the corpus callosum mostly found in men with alcohol use disorder and malnutrition, with cases reported worldwide across all races. The onset of the disease may be sudden, presenting with stupor, coma or seizures, while some may present with gait abnormality (spasticity), psychiatric problems, hemiparesis, aphasia, apraxia and incontinence, with resultant high morbidity and mortality rates. **Case:** The patient is a 30-year-old left-handed African-American man who presented with c/o altered mental status, urinary incontinence, slurred speech and left-sided weakness. The diagnosis of MBD was confirmed with DTI tractography, which showed significantly diminished commissural fibers extending to the right central semiovale lesion, near absent or significantly diminished commissural fiber extending through the corpus callosum indicating demyelination. **Discussion:** MBD is often an incidental diagnosis with high morbidity and mortality. This is different from previous cases because of earlier onset as opposed to onset around age 45, rapid recovery and minimal disability, as he could walk independently before discharge from the hospital. This case also shows added benefit of DTI tractography in the diagnosis of MBD. **Keywords:** Marchiafava-Bignami Disease (MBD), Demyelination, Central Nervous System, DTI Tractography, Alcohol Use Disorder, Corpus Callosum

NO. 16

COGNITIVE AND EMOTIONAL EMPATHY IN AUTISM SPECTRUM DISORDER: AN FMRI STUDY

Lead Author: Seungwon Chung, M.D.

Co-Author(s): Jonghyun Oh, M.D., Jieun Kim, M.D., Jungwoo Son, M.D., Ph.D.

SUMMARY:
Objective: The core feature of Autism Spectrum Disorder (ASD) is deficit in social interaction. Empathic ability is fundamental for human relationships. Recent evidence supposed that there are two systems for empathy: cognitive and emotional. We aimed to examine the difference of brain activity between individuals with and without ASD during cognitive and emotional empathy tasks. **Methods:** Seventeen individuals diagnosed with ASD and 22 age- and sex-matched heathy comparison individuals were scanned with functional MRI during the empathy tasks. Differences in brain activation were assessed by contrasting neural activation during a cognitive empathy task and an emotional empathy task. **Results:** In ASD subjects, greater neural activities were observed in the bilateral cuneus, precuneus and lingual gyri than control subjects during both tasks. ASD subjects showed increased neural activation in the right superior frontal gyrus and left posterior cingulate gyrus during the emotional empathy task compared with control subjects. In control subjects, there was no significant neural activation compared with ASD subjects, but there were greater neural activities in the left middle frontal gyrus and right anterior cingulate gyrus than ASD subjects. **Conclusion:** This fMRI study showed the differences in neural activity during the cognitive and emotional empathy tasks between individuals with ASD and healthy control individuals. Especially, the result of relative hypoactivation in the right anterior cingulate gyrus during the emotional empathy task in ASD subjects suggests that individuals with ASD may have a defect in emotional empathy. This finding is inconsistent with other studies. Further research using functional brain imaging will be needed to investigate more definite neurobiology of ASD in terms of empathy.

NO. 17

TEMPERAMENT AND CHARACTER TRAITS IN MOOD DISORDERS

Lead Author: Sabrina Correa da Costa, M.D.
Co-Author(s): Ives C. Passos, Giovana Zunta-Soares, Claude R. Cloninger, Joao Quevedo, Jair C. Soares.

SUMMARY:
Background: Temperament and character traits have been proposed to influence clinical presentations and outcomes of affective disorders. Temperament traits (Novelty Seeking [NS], Harm Avoidance [HA], Reward Dependence [RD] and Persistence [P]) represent the emotional core of personality and refer to automatic responses to emotional stimuli. Character traits (Self Directedness [SD], Cooperativeness [CO] and Self-Transcendence [ST]) represent concepts about self and personal relations, regulated by cognitive processes that develop throughout life. In this study, we aim to determine traits of personality among subjects with Bipolar Disorder (BD) I, BD II and Major Depressive Disorder (MDD), compared to healthy controls (HC). We hypothesized that patients with BD I present different patterns of personality traits when compared with patients with BD II, MDD, and HC, which could help to explain the differences in disease course and outcome. **Methods:** We analyzed the results of the Temperament and Character Inventory (TCI) applied to 61 BD I subjects, 15 BD II subjects, 44 MDD subjects, and 81 HC using ANCOVA. Age and years of education were included as covariates since they were significantly different among groups. Post-hoc analysis with Bonferroni Correction was also performed to discriminate individual effects. **Results:** BD I subjects have shown higher NS and ST compared to HC (Mean difference=4.804; p=0.001 and Mean difference=6.010; p <0.001, respectively). Moreover, BD I, BD II and MDD subjects have shown higher HA when compared to HC ([BD I: Mean difference=10.638; p <0.001], [BD II: Mean difference=12.656; p <0.001], [MDD: Mean difference=10.361; p <0.001]), as well as lower SD and CO ([BD I: Mean difference=-5.755; p <0.001], [BD II: Mean difference=-6.944; p <0.001], [MDD: Mean difference=-6.113; p <0.001]). **Conclusion:** Our findings suggest that BD I subjects present higher NS and ST patterns, which could influence and/or be exacerbated during manic episodes, especially regarding risky behaviors. In addition, higher HA traits could be perceived as a worry-prone and pessimistic behavior characteristic of mood disorders, particularly considering MDD and BD II. Finally, compared with HC, subjects with mood disorders have shown lower SD and CO, which could substantiate impairments in social functioning and difficulties in interpersonal relationships that aggravate the course of disease so importantly. LIMITATIONS: cross-sectional design, limited sample size. **Keywords:** Temperament, Character Traits, Bipolar Disorder, Major Depressive Disorder

NO. 18

INTERGENERATIONAL TRANSMISSION OF ANTISOCIAL PERSONALITY DISORDER: MATERNAL ROLE AND ITS DECLINATION

Lead Author: Ester di Giacomo, M.D.
Co-Author(s): Massimo Clerici

SUMMARY:

Antisocial Personality Disorder is a well-established disease that features space from cruelty to lack of empathy and remorse. Its etiology has been deeply analyzed both for genetic and environmental implications. The role of family context has been underlined throughout the whole psychopathology as an explanation of the etiological conflict between nature and nurture. Even if this conflict seems to be apparently solved, it is still possible to ponder family implications in terms of causes and consequences. In the antisocial field, maternal role may offer interesting and surprising food for thought. Even if it is commonly believed to be an intergenerational transmission of aberrant behaviors, particularly in terms of learning behaviors and lack of empathy assimilation, Antisocial Personality Disorder exists as a side part of maternal pathological expression that may play a role in intergenerational transmission, and it is extremely difficult to detect. Female declination of this disorder may be expressed also through somatic implications and complaints, leading to the hypothesis of a self-reflection on the lack of consideration for others' needs, which is distinctive. It is of extreme importance, particularly in terms of prevention, to consider and identify these connotations of the disorder to be able to try to interrupt the cycle of transmission through generations.

NO. 19

NEW ONSET PSYCHOSIS IN PATIENT WITH CEREBRAL PALSY

Lead Author: Asha Dusad, M.D.
Co-Author(s): Dr. Jeffery Bennett, M.D., Dr. Mohsin Khan

SUMMARY:

Background: Patients with cerebral palsy present with physical dysfunction; however, this population is associated with mental disorders as well. Cerebral palsy is a neurologic condition that results due to brain injury prior to complete brain development; As a result, patients are at high risk of developing mental disorders like intellectual disability, anxiety, depression, ASD and learning disabilities, secondary to environmental (social isolation, dependent on family) as well biological factors (chronic pain, physical limitation). **Case:** A 24-year-old wheelchair-bound Caucasian female has a diagnosis of cerebral palsy and a psychiatric history of anxiety, depression, developmental disability and avoidant personality. She presented with paranoid delusion, disorganized behavior and auditory hallucinations. The patient had been stable with her antidepressant and antianxiety medication; however, she was seen in the outpatient clinic with a new onset of psychosis. Her labs were negative, toxicological screen negative and CT head normal, and no cause could be found for this new presentation. **Conclusion:** This was an interesting case to illustrate the complexity of medical and psychiatric patients with CP. It leads to exploration of the neuropathological causes leading to the development of psychiatric disorder in CP patients. This area needs more research and exploration to find out various treatment interventions for psychiatric patients with CP.

NO. 20

OVERCONSUMPTION OF BENZODIAZEPINES: IS VAS THE SOLUTION?

Lead Author: Gael Fournis, M.D.
Co-Author(s): Clemence Avril, Lou Madieta, Nidal Nabhan-Abou, Benedicte Gohier

SUMMARY:

The optimal management of psychiatric symptoms requires constant adaptation of the therapeutic strategy to clinic evolution. If benzodiazepines are a treatment of choice for acute anxiety states in hospitals, their excessive consumption is a concern, revealing a preference of chemical anxiolysis to nondrug alternatives, yet effective for episodes of low or moderate intensities. Faced with an acute anxiety, choice of various therapeutic options requires evaluating its intensity in order to establish an appropriate therapeutic response. To enable systematic and accurate evaluation of an anxious state, Visual Analogue Scale (VAS) seems to be the most suitable tool. The application of VAS to measure anxiety is widely validated by previous research on the subject. We assume that the self-assessment of anxiety is likely to lead to a reduction in benzodiazepine use. This study aims to determine the impact of systematic evaluation of acute anxious state by VAS, on consumption of benzodiazepines, by proposing a therapeutic strategy adapted to the anxiety level. This is a comparative, prospective, multicentric study. Both studied samples will come from a population of patients hospitalized in

psychiatric crisis service and recruited sequentially over a period of three months each. For the first group, our practices will not change; for the second group, we introduce VAS as a systematic tool for evaluating each acute episode. All patients over a period of 6 months will be included, for which is provided a conditional anxiolytic treatment by benzodiazepine, regardless of their pathology. Then will be compared individual and overall consumption of benzodiazepines (in mg diazepam-equivalent per day of hospitalization) of the two samples. To date, data collection is ongoing. The results are currently analyzed and will be presented. The evaluation of a symptom, subjective by nature, by an outside observer is undeniably biased. The benefit of self-evaluation has been proven in the treatment of other acute symptoms such as pain. With VAS, the objective is to better know the intensity of a symptom and to offer the patient matched care. Its use as an investigative tool of acute anxious states in hospitals appears to be a promising lead, especially concerning the implementation of nonpharmacological anxiolytic strategies, as an alternative to over-consumption of benzodiazepines. The adaptation of the therapeutic anxiolytic strategy by self-assessment of the intensity of an anxiety state appears timely, both on an individual level, and as a public health point of view. The use of VAS should, in this way, allow preferring non-drug strategies and reduce the consumption of benzodiazepines.

NO. 21

OPPORTUNITY AND CHALLENGES IN MENTAL HEALTH AND PSYCHOSOCIAL SUPPORT SECTOR AFTER MEGA EARTHQUAKE IN NEPAL

Lead Author: Shree Ram Ghimire, M.D.
Co-Author(s): Sarita Parajuli

SUMMARY:

There have been invisible but significant mental health and psychosocial consequences as a result of the mega earthquake in Nepal. According to the Nepalese government's official report, over 8,844 people lost their lives, over 22,000 were injured, over 150 went missing and hundreds of thousands lost their homes and property in the aftermath of the disaster. There has been more focus given on the mental health sector soon after the mega earthquake. In order to better organize the disaster relief efforts at district and national levels, the UN cluster approach came into effect. Two clusters are active in the MHPSS response: the Psychosocial Support sub-cluster under the Protection cluster and the Mental Health sub-cluster under the Health cluster. The Psychosocial Support Technical Working Group has been formed to coordinate and share the information among organizations and different professionals. A special target has been given for five major outputs: coordination among project partners, provision of psychological first aid, provision of counseling services to vulnerable groups, provision of specialized mental health and psychological services, and raising awareness of psychosocial support through mass media by implementing various activities. There were lots of challenges encountered during these periods. The earthquake has a lot of serious impact on people's health, including anxiety disorder, relapse of psychosis, depression, PTSD and suicide. The challenges faced by mental health and psychosocial professionals after the earthquake should be taken as an opportunity for the development of this field.

NO. 22

FACTORS ASSOCIATED WITH NONCOMPLIANCE IN SCHIZOPHRENIA

Lead Author: Shree Ram Ghimire, M.D.
Co-Author(s): Sarita Parajuli

SUMMARY:

Patients' compliance is an important factor influencing the successful maintenance of treatment and the prevention of relapse. Poor treatment compliance is a serious condition that interferes with a person's capacity to function in the world and is a major preventable cause of psychiatric morbidity and mortality. The objective of study was to identify patients with noncompliance and factors associated with it among schizophrenic patients. This study explored factors associated with poor treatment compliance in 200 schizophrenic patients attending OPD at National Medical College, Department of Psychiatry. The study was descriptive type with purposive sampling; a type of nonrandom sampling technique was utilized for study. The patients and their informants who were considered for inclusion criteria in screening were explained the nature of the study, and their informed consent was taken prior to study. After giving proper direction, a questionnaire was given to patients and their family members. Out of 200 respondents, the majority were male (61%) and female (39%) in the ratio of 1.56:1. One third (32%) of them were illiterate, more than half (59%) have income less than 5,000. Approximately 50% of respondents and family

members have lack of knowledge and awareness of illness. Poor compliance among patients was found due to numerous direct or indirect reasons, important being suspiciousness (2%), hallucination (2%), poor insight (2%), unaffordability (68%), nonavailability (8%), unwanted side effects (92%), comorbidid illness (14%) and substance use (19%). Similarly, doctor-related factors contributing to poor compliance were less awareness-given, <10 minutes given in appointment (87%), unfriendly attitude (7%) inaccessibility (11%) and prescription of more or equal to four tablets (35%). The sociocultural, familial and environmental factors associated with poor compliance were poor knowledge of illness (38%), drug therapy, lack of knowledge about family role (29%), negative contribution by people (77%), lack of availability of mental health service nearby (87%), excessive time taken to reach appointment (>5 hours in 30%) and belief in faith healing (72%). The study explored factors that directly or indirectly contribute to poor treatment compliance, which were multi-factorial. No isolated single or definite factor was responsible for the illness. Social, cultural, familial and environmental factors played a key role in noncompliance. Detection and prevention of certain conditions at the proper time could prevent individuals vulnerable to noncompliance. Moreover, exploration of contributing factors also helps in early detection of poor compliance and treatment of illness.

NO. 23

DULOXETINE INDUCED URINARY RETENTION

Lead Author: Shree Ram Ghimire, M.D.

SUMMARY:

Duloxetine, a dual-reuptake inhibitor of serotonin and norepinephrine, has been approved for the treatment of major depressive disorder and for stress urinary incontinence. Here, we describe the case of a 28-year-old male patient with depression and no medical, urogenital, or psychiatric illness histories. He presented with depressive symptoms along with unexplained somatic symptoms for two months. He developed the severe side effect of urinary retention during antidepressive treatment with duloxetine after two weeks. We started duloxetine (20 mg/d) after, and the patient showed no improvement over a two-week period. The dose was increased to 30mg/d. However, he developed urinary retention and need catheterization. The urinary retention disappeared completely within five days after discontinuation of duloxetine. We then switched him to venlafaxine (150 mg/d) and were able to keep the depression in remission. Regardless of possible debates concerning the exact contributing factor, the fact that such a complication occurred in a young male patient with no urological illness is of great concern. Thus, this case report suggests the increased attention to urinary function while using duloxetine.

NO. 24

DMDD: A DIAGNOSTIC DILEMMA IN PEDIATRIC AND ADOLESCENT MOOD DISORDERS

Lead Author: Pooja Shah, M.D.

Co-Author(s): Stacy Doumas, M.D., Ramon Solhkhah, M.D.

SUMMARY:

Disruptive Mood Dysregulation Disorder (DMDD) is a novel amalgamation of various pediatric mood disorders characterized by chronic irritability and temper tantrums out of proportion to the situation, occurring an average of three or more times a week. It is a big burden in terms of analyzing the quality of life and a possible unfavorable outcome later in life. A steep increment in the diagnosis of pediatric bipolar disorder (BD) prompted debate into the clinical scenario, which was once thought to be exclusively prevalent in the adult population. Looking back in retrospect, while inking the criteria for mood disorders, DSM faced major criticism from within and outside of the psychiatric community in regards to coining DMDD. Over the years, extensive literature and research strongly influenced DSM-V to give DMDD a place under the mood disorders in 2013. This article highlights the clinical approach in terms of reaching a valid differential diagnosis for child and adolescent mood dysregulation. We have made an effort to emphasize the need for physicians to keep an open mind while approaching such complex cases due to major overlap in the clinical presentations amongst various pediatric mood disorders. Detection of early symptoms suggestive of an onset of pediatric mood disorder and appropriate diagnosis supplemented by a timely intervention by the caregivers and the physician can result in disruption of the chain of events, leading to better prognosis and improved quality of life. **Keywords:** Mood, DSM-V, Bipolar Disorder, Dysregulation, Disruptive Mood

NO. 25

PSYCHOTIC EPISODE AS FIRST MANIFESTATION OF ANTI-NMDA ENCEPHALITIS: CASE REPORT

Lead Author: Jesus Gomez-Trigo Baldominos, M.D.
Co-Author(s): Cristina Uzal Fernández, Manuela Pérez García, Luis Docasar Bértolo, Mario Páramo Fernández, Eduardo Paz Silva, Gerardo Flórez Menéndez, Lucía del Río Casanova

SUMMARY:
Anti-N-methyl-D-aspartate encephalitis, of paraneoplastic or autoimmune etiology, is characterized by malaise like a viral illness, starting with neuropsychiatric symptoms about two weeks after the onset of symptoms and followed by changes in cognitive spheres as memory impairment, dyskinesia or seizures. The patient, a 42-year-old woman without psychiatric or somatic relevant history, begins suddenly with hypochondriac ideation around banal symptoms (dyspnea sensation, fatigue, paresthesia in lower limbs), with full conviction of suffering false somatic pathology, meriting neurological specialist assistance, which suspects or fits the symptoms within the affective sphere and recommends antidepressant treatment. The disorder turns into a psychotic break, maintaining the hypochondriac ideation previously mentioned (conviction of schizophrenia, like her son), delusions of prejudice regarding her family, behavioral disorders and parasuicidal gestures threatening her only son, appeared all to draw the doctors' attention, according to her testimony, so this psychopathology motivates her admission to the psychiatric unit. During her hospital stay, a predominance of neuropsychiatric symptoms were observed, along with cognitive impairment in the form of mnemonic failure, behavioral disorganization and altered speech, suggesting organic etiology; therefore, a battery of complementary tests involving neuroimaging and analytical exams were performed. With the administration of antipsychotic medication (aripiprazole 10mg per day), the clinical profile improves so that the patient could be discharged pending test results, which later would be positive in detecting anti-NMDAr. In further revisions, antipsychotic treatment is kept as well as corticosteroid and autoimmune treatment (azathioprine), with special medical follow-up in order to diagnose complications like gynecological neoplasia. Since its first description in 2007, the anti-NMDAr encephalitis has been part of differential diagnosis in acute psychotic disorder, having great importance due to its possible paraneoplastic manifestation, which allows detection of silent tumor processes that have clinically debuted with psychiatric disorders.

NO. 26

SOCIODEMOGRAPHIC CHARACTERISTICS OF CHILDREN AND ADOLESCENTS REFERRED BY THE SCHOOL FOR MENTAL HEALTH TREATMENT IN A BRAZILIAN UNIVERSITY CLINIC

Lead Author: Valeria Soares Gularte
Co-Author(s): Carlos Henrique Kessler, Natália Rossato Crasoves

SUMMARY:
Background: The search for psychology services for children and adolescents in university clinics has been investigated in several studies that aimed to characterize the users of these services. The school is an important development and socialization space for children and adolescents who spend part of their days inside. Therefore, the school is also an important source of information, detection of symptoms and referrals of students to professional care. Historically, the majority of children and adolescents who sought care in The Clinic of Psychological Treatment at Federal University of Rio Grande do Sul were referred by schools. The present study objective was to establish the sociodemographic profile of children and adolescents referred by schools to The Clinic of Psychological Treatment at Federal University of Rio Grande do Sul during a period of 30 months (from January 2013 until July 2015). **Methods:** The sample was of children and adolescents up to 18 years old, referred by schools for psychological and psychiatric care in The Clinic of Psychological Treatment at Federal University of Rio Grande do Sul. Data were collected from the patient records. The patients' profiles were established based on the following criteria: age, gender, educational level and reason for seeking treatment. Simple descriptive analyses were conducted, according to which the relative frequency and absolute frequency of the aforementioned variables are presented. **Results:** The total sample was made up of 346 patients. There were 237 male patients (68.49%) and 109 female patients (31.5%). Early childhood education sent 19.07% of patients, elementary school sent 77.45% (178 male, 90 female), high school sent 2.31% and special school sent 1.15%. The main reasons for referral by early childhood education was aggressiveness and deviant behavior among males, and deviant behavior and aggressiveness among females; by elementary school was school

performance and deviant behavior among males and females; by high school was school performance and aggressiveness among males, and family problems among females; by special school was speech problems and relationship difficulties among males, and hyperactivity and puberty in females. Periods of 6–9 years in boys and 6–9/11–14 years in girls were periods of high variability of symptoms and referral to treatment. **Conclusion:** The results indicate the prevalence of complaints associated with school performance and deviant behavior. The higher prevalence of male patients is similar to that obtained in other Brazilian and international studies with children referred to mental health care. Children with externalizing problems are more likely to be referred to mental health services than those with internalizing problems. The higher prevalence of externalizing problems among boys could justify the higher number of male patients. High referral by elementary school is associated with the early years and puberty.

NO. 27

FRONTAL LOBE ABOULIA MASQUERADING AS MDD: A CASE REPORT AND LITERATURE REVIEW

Lead Author: John Gurski, D.O.
Co-Author(s): Lakshit Jain, M.D., Gary Horowitz, D.O.

SUMMARY:

Background: Aboulia, or lack of will, is a well-used term to describe a variety of symptoms that have evolved through time. Distinct from the other disorders of diminished motivation in quantitative terms, aboulia symptoms are defined as more severe than those of the more common state of clinical apathy and less severe than those of kinetic mutism. Aboulia may be seen in a variety of psychiatric and neurological conditions, and presentation may differ when approached from a neurologic or psychiatric angle. In this poster, we present a case seen during our rotation in neurology. Diseases of diminished motivation often appear low on differential considerations, so this case is described for example of proper identification of frontal lobe aboulia. **Methods:** A PubMed search was conducted using "frontal lobe aboulia," "apathy" and "depression" as key words. **Case:** A 37-year-old Caucasian with significant medical comorbidities (stage 4 prostatic carcinoma with cerebral and spinal metastasis, penile prosthesis with chronic UTI, recently diagnosed nonsmall cell lung carcinoma with recent smoking cessation in July 2015 and surgical removal of cerebral metastasis from frontal and temporal lobe) was seen as part of a neurology consultation. The patient was admitted for significant back pain issues due to spinal metastasis, replacement of penile prosthesis and treatment of his chronic UTI. The patient was observed at home with gradually decreasing responsiveness to stimuli, decreased speech content and depressed mood. Prior to admission, the patient was seen by an outpatient psychiatrist and was started on mirtazapine, the prescription of which the family was unable to fill due to the admission. The patient's family also reported a recent switch to a newer chemotherapy agent two weeks ago and attributed these behavioral changes to it. A diagnosis for frontal lobe aboulia was made on consultation, and a CT was ordered, which revealed a new CVA. The patient was treated appropriately and followed up prior to discharge. **Discussion:** In the case, while there were significant lifetime stressors, the patient's clinical presentation can be completely explained by a diagnosis of frontal lobe aboulia. As Per ICD 10, the various psychiatric diagnoses are arranged in a descending order of priority. If a patient presentation completely adheres to a specific set of criteria, then that is the diagnosis, regardless of other syndromes below it. Another distinction to make is that aboulia is different from the *DSM-5* criteria of major depressive disorder, which this patient was diagnosed with prior to his arrival to us. Misdiagnosing these may leave the patient at risk for grave consequences. Aboulia may also appear as negative symptoms of schizophrenia and catatonia, and making a correct clinical diagnosis becomes much more relevant.

NO. 28

CANADIAN PSYCHIATRY RESIDENTS' ATTITUDES TO BECOMING MENTALLY ILL

Lead Author: Tariq Hassan
Co-Author(s): Dr. Nam Dinh Doan, Dr. Mir Nadeem Mazhar, Dr. Neeraj Bajaj, Dr. Tariq Alauddin Munshi, Dr. Dianne Groll, Tanya Tran

SUMMARY:

Background: Doctors are at increased risk of developing a mental illness and at increased risk of suicide compared to the general population. Residents and medical students are similarly at risk, yet according to the literature, when faced with psychological distress, many are likely to avoid seeking professional help. Busy schedules notwithstanding, it is increasingly clear that stigma and the culture of medicine are implicated as well.

Among medical disciplines, psychiatry is most associated with mental health advocacy and combating stigma in particular. This study attempts to assess the attitudes of psychiatry residents in the Canadian province of Ontario with regards to disclosure and treatment preference if they were to become mentally ill. **Methods:** Data was collected through an anonymous survey of all psychiatry residents registered in the province of Ontario, Canada between January and April, 2014. The survey package contained a covering letter, a two-page questionnaire, and a return stamped addressed envelope. The surveys were distributed by either the administrator or the program director of each of the five psychiatry programs. **Results:** 106 out of 301 questionnaires were returned (response rate of 35.2%). Respondents would be most likely to disclose their mental illness in the first instance to family and friends (61, 57.5%), although many would instead prefer to disclose to their family physician (30, 28.3%). When asked about the most important factor affecting the decision not to disclose, the most common response was career implications (39, 36.8%). There was no association between choice of whom to disclose and factor affecting disclosure (Fisher's Exact=11.39; p=.851; Cramer's V=.22). There was also no association between choice of whom to disclose to and previous experience of mental illness (ç‡Â²=1.18; df=1; p=.276; Cramer's V=.-12). When considering outpatient treatment, the majority of respondents would opt for formal professional advice (73, 68.9%). With regard to inpatient treatment, the majority would opt for an out-of-area mental health facility (88, 83.0%). Those who would choose an out-of-area facility were much more likely to cite confidentiality and stigma as factors influencing their choice. Conversely, those choosing a local facility were more likely to cite quality of care and convenience as influencing factors. **Conclusion:** Concerns about stigma, confidentiality, and career implications continue to influence the help-seeking behaviors of many psychiatry residents in Ontario. In spite of these findings, in our sample, we also note that an overwhelming majority of respondents would choose disclosure of their major psychiatric illness as opposed to not. Moreover, in some instances, initial disclosure to a loved one may represent the first step in seeking help from a mental health professional. Some cited reasons, such as "confidentiality," in choosing an out-of-area hospital.

NO. 29

THE EFFECT OF EXPOSURE TO FOREST ENVIRONMENT ON CYTOKINES AND ANTI-OXIDANTS IN COMPARISON TO URBAN AMONG YOUNG ADULTS WITH MODERATE LEVEL OF STRESS

Lead Author: Won Kim
Co-Author(s): Han Choi, Jong-Min Woo

SUMMARY:
Objective: Phytoncide, a terpene substance containing essential oil of plants, is a biogenic volatile organic compound that is abundant in forest environments. Previous studies have suggested that refined terpene can improve immune function. The purpose of this study is to investigate the effect of exposure to forest on cytokines and anti-oxidants among university students with a moderate level of stress and to compare the results to those who were measured in an urban environment. **Methods:** A total of 26 subjects were recruited through advertisement from two universities in the Seoul metropolitan area based on an initial assessment using the Stress Response Inventory-Modified Form (SRI-MF). Subjects stayed in the urban environment and were guided to breathe regularly for two hours. After that, blood samples were collected and the serum levels of cytokines including Interleukin-6 (IL-6), Interleukin-8 (IL-8), Tumor Necrosis Factor-α (TNF-α) and glutathione peroxidase (GPx) were examined. Subjects moved to a small town in a rural area for an equal amount of time to exclude carryover effect and spent another two hours in a forest environment. The second blood samples were collected to assess the effect of exposure to the forest environment. The serum levels of cytokines were assessed using an enzyme-linked immunosorbent assay (ELISA). Paired t-tests were conducted to analyze the difference between exposure to urban and forest environments. **Results:** The IL-8 and TNF-α concentration levels were significantly decreased after the exposure to the forest environment when compared to the urban environment (11.20 vs. 9.67, t=3.928, p <0.01, and 0.92 vs. 0.86, t=2.269, p <0.05). The GPx concentration level was increased after exposure to the forest environment (159.65 vs. 186.13, t=-2.274, p <0.05). **Conclusion:** IL-8 mainly acts as neutrophil and lymphocyte chemoattractant and activation factor. TNF-α enhances T and B cell proliferation and B cell differentiation and increases killing by Natural Killer (NK) cells. Glutathione peroxidase (GPx) is an important enzyme in cellular anti-oxidant defense systems, detoxifying peroxides and hydroperoxides. These results suggest that, after exposure to the

forest environment, significant changes have occurred in the levels of cytokines to prevent hyperactivity of immune cells. Moreover, this study also demonstrated a significant increase of GPx. Further studies are needed to confirm these results: the biological effect of olfactory stimulation in a forest environment. **Keywords:** Forest, Phytoncide, Cytokines, Glutathione, Interleukin, Antioxidant. ACKNOWLEDGMENT: This study was carried out with the support of the Forest-Science and Technology Projects (project No. S111115L020100) provided by Korea Forest Service.

NO. 30

ASSOCIATIONS OF LATE ONSET BIPOLAR DISORDER AND BRAIN HYPERINTENSITIES IN PATIENTS WITH HIGH INTELLIGENCE: A CASE REPORT

Lead Author: Muhammad Navaid Iqbal, M.D., M.B.B.S.

Co-Author(s): Fatima Iqbal, M.D., Arshad Ali, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Bipolar disorder (BD) is a chronic mental illness, carrying significant morbidity with a profound burden on the health care system. The peak age of diagnosing BD is between 20 and 40 years. Reportedly, 90% of cases are diagnosed with BD before the age of 50 years. Late onset Bipolar disorder (LBD) is a condition prevalent in 10% of the patient population, according to recent and remote studies. Interestingly, LBD is found to be highly prevalent in patients with high intelligence. Studies have shown that patients with high intelligence have increased neural efficiency, cortical thickness and gray and white matter volume, which makes them more prone to ischemic damage. Hence, medical illnesses such as HTN, CAD that tends to occur in older age, cause cortical and subcortical hyperintensities as evident from neuroimaging, especially in these people, leading to the development of mood disorders earlier in life. **Objective:** The purpose of our case report was to show the impact of multiple comorbidities in patients with higher intelligence leading to significant mood disorders such as, in this case, late onset Bipolar illness. **Case:** We report the case of a 67-year-old Caucasian male who was a lawyer by profession from Columbia University with no past psychiatric history. The patient was admitted twice to an inpatient psychiatric unit since January 2015 secondary to agitation, aggression, euphoria and grandiosity. He was diagnosed with unspecified Bipolar D/O. He had multiple comorbidities such as hypertension, coronary artery disease (CAD) and psoriasis for the past couple of years. An interesting aspect in his case was that he had these mood symptoms for a couple of years, but they were not as intense as before, and no necessary blood work or neuroimaging was done in the past. **Discussion:** The overarching aim of this case report was to highlight the impact of comorbidities in patients with higher intelligence suffering from LBD and to emphasize the need for early diagnostic tools that are not limited to simple blood work but include more detailed neuroimaging techniques in order to provide necessary pharmacological and behavioral modifications early in the course of disease to help in the prevention of such illness. Many questions still need to be addressed, and further research is required to unravel the association of BD, hyperintensities and age.

NO. 31

THERAPEUTIC MODALITIES FOR PSYCHOLOGICAL AND BEHAVIORAL MANIFESTATIONS IN PATIENTS WITH LEWY BODY DEMENTIA

Lead Author: Muhammad Navaid Iqbal, M.D., M.B.B.S.

Co-Author(s): Lara Addesso, M.D., Brian Zeidan, M.D., Mehr Iqbal, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: According to Alzheimer's Disease International (ADI), approximately 35.6 million individuals suffer from dementia worldwide, and the number will increase to 90.3 million by 2040. Lewy Body Dementia (LBD) is considered to be the second most common subtype of dementia. The underlying biology of dementia with Lewy bodies is rather complex; however, presence of alpha synuclein containing Lewy bodies is a collective finding. The most evident symptoms of LBD include cognitive dysfunction, spontaneous Parkinsonism, fluctuating confusion, and psychiatric (vivid hallucination, depression, delusions) and behavioral (agitation, aggression, wandering, apathy) disturbances. These symptoms lead to significant morbidity and mortality in these patients. To date, there is no permanent cure for dementia; therefore, the need for significant evidence of effective therapies persists. Recent research suggests that art, music and learning (stimulating patients' emotions and brain) can help prevent development of dementia. Additionally, there are multiple assistive technologies (e.g., animal therapy, assistive robots and transcranial magnetic

stimulation) for dementia care. **Objective:** The primary aim of this study was to investigate nonpharmacological treatments for psychological and behavioral dysfunction in patients with Lewy Body Dementia (LBD). Previous reports provide evidence of holistic therapies improving apathy, depression, anxiety, agitation and socialization amongst elderly patients with dementia. **Discussion:** Neuropsychiatric symptoms of dementia can be observed in approximately 60–98% of patients, especially in later stages of disease. The impact of neuropsychiatric symptoms is associated with greater caregiver distress and depression, caregiver income and unemployment, and longer inpatient hospital stay. There are multiple pharmacological therapies for neuropsychiatric behavior, including antipsychotics, anticonvulsants, antidepressants, anxiolytics, cholinesterase inhibitors and N-methyl-D-aspartate receptor modulators. Despite numerous medical treatment options, there is still a lack of a structured model of intervention that can aid the clinicians in decision making. Numerous nonpharmacological therapies for neuropsychiatric behavior in patients with dementia have been researched and brought into clinical practice. Cognitive strategies also exist, that aim to decrease the cognitive load in patients with dementia. Such strategies include reality orientation, validation therapy, reminiscence therapy and life review therapy. Music therapy is a cost-effective means of reducing anxiety, depression and agitation and improving overall quality of life. Animal therapy implementing canines has indicated reduction in aggression and agitation and promoted socializing behavior. Given these affordable and effective interventions, considerable investigation and evaluation should be encouraged so that a superior treatment plan can potentially be devised.

NO. 32

LATE-ONSET LYME DISEASE-INDUCED PSYCHOSIS: IS IT TREATABLE?

Lead Author: Muhammad Navaid Iqbal, M.D., M.B.B.S.

Co-Author(s): Lara Addesso, M.D., Mehr Iqbal, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Lyme disease is a multisystemic infectious illness that has the potential for harming the brain, leading to a variety of neurologic and psychiatric complications. Although Lyme disease mostly affects the skin, joints, heart and CNS, a plethora of psychiatric complications are also seen in certain late-onset Lyme disease cases as well. According to the Centers for Disease Control, recommended treatment for Lyme disease infection is intravenous antibiotics. Even after adequate antibiotic therapy, several cases of patients who had suffered from Lyme disease have occurrence of psychiatric symptoms that are difficult to treat, and a standard treatment protocol does not exist to treat late-onset Lyme disease-induced psychosis. The authors of this case report discuss the neuropsychological symptoms of late-onset Lyme disease with emphasis on psychosis and to delineate effective standard psychopharmacological treatment for unrecognized and untreated chronic Lyme disease psychological manifestations. **Case:** We report a case of a 26-year-old Caucasian female with past psychiatric history of Bipolar Depression, who was transferred to Bergen Regional Medical Center (BRMC) presenting with somatic delusions, depressive symptoms including suicidal ideation and anxiety. She was diagnosed according to DSM-V with Psychotic D/O due to another medical condition (Lyme disease) with delusions. She was started on atypical antipsychotics and mood stabilizers (risperidone, divalproex sodium, duloxetine), which improved her depressive and anxiety symptoms, but her somatic delusions did not totally abate. At the time of discharge, she was not suicidal, reported improvement in her mood symptoms and agreed to take medications and also to follow-up regularly with an outpatient psychiatrist for her mental illness. **Discussion:** This case highlights some important aspects regarding the diagnosis and management of Lyme disease-induced psychosis. First, there is still a lack of diagnostic tools for identifying neuroborreliosis infection, and most of the time, the physician has to rely on his clinical judgment to accurately identify the infection and its complications. Also, not all patients present with the early clinical manifestations of this infection, as in our case, where the patient never developed symptoms until more than a year after exposure. This creates a gray area in the management of this condition. **Conclusion:** After conducting an extensive literature review, multiple cases of late-onset Lyme disease with psychological symptoms were uncovered. Although a current antibiotic regimen exist for treating late-onset Lyme infection, it does not adequately treat the neuropsychiatric complications, and there is still a dire need for an established psychotropic regimen. We want to heighten awareness of psychiatric complications in

Lyme disease patients and consider treatment with conventional typical and atypical psychotropics early in the course of the disease.

NO. 33

AGE-RELATED DIFFERENCES IN SUICIDALITY BETWEEN YOUNGER PEOPLE AND OLDER ADULTS WITH DEPRESSION

Lead Author: Tae-Youn Jun, M.D., Ph.D.
Co-Author(s): Ho-Jun Seo, M.D., Ph.D.

SUMMARY:

Objective: To identify differences in factors associated with suicidality between young and older adults with depression. **Methods:** A total of 1,003 patients with moderate to severe depression (Hamilton Depression Rating Scale [HDRS] score ≥14) were recruited from a national sample of 18 hospitals. Of the patients included in this study, 103 (10.3%) were placed in the younger group (age <25 years) and 900 (89.7%) were placed in the older group (age ≥25 years). Suicide-related variables and predictive factors associated with significant suicidal ideation were compared between the two groups. **Results:** Regardless of the severity of depression, subjects in the younger group were more likely than were those in the older group to report significant suicidal ideation (scores ≥6 on the Beck Scale for Suicide Ideation [SSI-B], 79.6% vs. 53.7%, respectively; p <0.001), to have had a suicide attempt at the index episode (4.9% vs. 1.6%, respectively; p=0.037), and to have a history of suicide attempt (43.7% vs. 19.4%, respectively; p <0.001). Logistic regression models revealed that, in contrast to the older group, the only factors significantly associated with suicidal ideation in the younger group were the history of suicide attempts (OR [95% CI]: 12.4 [1.5–99.1]; p=0.018) and recurrent depressive episodes (OR [95% CI]: 13.0 [1.6–104.0]; p=0.016). Also in contrast to the older subjects, an increase in HDRS score was not identified as a predictor of significant suicidal ideation in the younger subjects. **Conclusion:** The present findings demonstrate that suicidality in the younger group was more severe than in the older group, but the suicidality in the younger subjects was not associated with the severity of depression. These data suggest that close attention should be paid to young people, even in mild or moderate depression.

NO. 34

DOES ADMISSION TO HOSPITAL IMPROVE SHORT-TERM OUTCOMES IN YOUNG PEOPLE WITH SEVERE SOMATIC SYMPTOM DISORDERS AND FUNCTIONAL NEUROLOGICAL DISORDERS?

Lead Author: Sara Kakhi, M.D.

SUMMARY:

Background: Inpatient stay is not a common approach for somatoform or Functional Neurological disorders; however, in severe cases, inpatient stay may become inevitable. Our aim was to evaluate the short-term effectiveness of rehabilitation and cognitive behavioral interventions in treatment of young people with severe somatoform or conversion disorders. Treatment at Bursledon House includes an inpatient hospital admission using a rehabilitation approach, family/social interventions, psychology sessions and a behavior modification program. Standardized assessment of functional impairment and health-related quality of life is performed at baseline and the point of discharge. Patients and family will regularly be reviewed by the team to recognize and address predisposing and/or maintenance factors. Continuous link with school and community teams will be ensured. PICO: â€¢ Patient population: young people with diagnosis of Severe Somatoform disorders or Functional Neurological symptoms who admitted to Bursledon House â€¢ Intervention: six to eight weeks admission with possibility for extension â€¢ Comparison: between functioning before and after admission by considering GAS goals and CGAS scores, feedback from young person and families â€¢ Outcome: psychosocial improvement and changes in objective scales **Results:** Thirteen total admission for medically unexplained symptoms in year 2014. All of these cases fulfil the diagnostic criteria for ICD-10 somatoform disorders or dissociative/conversion disorders. Eleven were referred on a nonurgent basis for an admission. Eleven cases were referred by consultant pediatrician, one case by epilepsy nurse and one by hospital psychologist. Male to female ratio was 4/9. Age range was 11–17 yrs. Mean age was 14.1 yrs. Length of admission ranged between 23 and 89 days, and mean length of admission was 45 days. Two premature discharges by patient/family, one only stayed for two days and another 19 days. School attendance before and after admission: Three out of Thirteen were not attending school at the time of preadmission, from which only one had home tuition. Seven out of Thirteen cases were attending school less than 50% at the point of initial admission. Apart from two cases when

admissions were prematurely ended against medical advice, admission to Bursledon House improved school attendance in all cases. Following discharge, 45% went back to full-time education and 36% planned to gradually regain their school attendance via consultation and careful planning with the local school. FINDINGS: Mean CGAS on admission: 39.9. 41–50 defined as moderate degree of interference in functioning in most social areas or severe impairment of functioning in one area. Mean CGAS on discharge: 58.3. 51–60 defined as variable functioning with sporadic difficulties or symptoms in several but not all social areas. Mean difference of 17.53 suggests more than one subgroup improvement in all cases that completed admission period.

NO. 35

HEART RATE VARIABILITY OF POSTTRAUMATIC STRESS DISORDER IN KOREAN VETERANS

Lead Author: Suk-Hoon Kang, M.D.
Co-Author(s): Hyung Chan Kim, M.D., Hae Gyung Chung, M.D., Jin Hee Choi, M.D., Tae Yong Kim, M.D., Ph.D., Hyung Seok So, M.D., Park Joo Eon, M.D., Ph.D., Chung Moon Yong, M.D., Ph.D.

SUMMARY:

Objective: Heart rate variability (HRV) is reported to reflect the autonomic nervous system. Generally, patients with conditions such as posttraumatic stress disorder (PTSD) showed lower HRV, but the result was inconsistent. This study was to investigate the analysis of HRV in PTSD patients according to postural change with head-up tilt testing. **Methods:** Seventy-one PTSD patients and seventy normal controls participated. The diagnosis of PTSD was established by the structured clinical interview for diagnostic and statistical manual of mental disorders (SCID)-IV. The posttraumatic stress disorder checklist 5 (PCL5), Beck depression inventory (BDI), Beck anxiety inventory (BAI), psychosocial well-being index short form (PWI-SF) and Pittsburgh sleep quality index (PSQI) were applied to all study subjects. The HRV measurement, including heart rate (HR), standard deviation of the NN interval (SDNN), the square root of the mean squared differences of successive NN intervals (RMSSD), physical stress index (PSI), log total power (LNTP), log low frequency (LNLF), log high frequency (LNHF) and low-frequency/high-frequency ratio (LF/HF ratio), were performed at supine position for the first five minutes, then underwent head-up tilt testing for the last five minutes at an erect position. **Results:** The PTSD group showed a significantly higher score than the nonPTSD group in PCL5 (t=11.625, p=0.001), BDI (t=5.543, p=0.020) and BAI (t=9.500, p=0.002). In the PTSD group, SDNN (t=3.563, p=0.039), RMSSD (t=3.514, p=0.011) and LNLF (t=0.902, p <0.001) were significantly lower, but PSI (t=-3.818, p <0.001) and LF/HF ratio (t=-1.730, p=0.041) were significantly higher than in the nonPTSD group. After tilting, higher PSI (t=-2.570, p <0.001), lower LNLF (t=1.927, p=0.011) and lower LNHF (t=2.403, p=0.025) were found in the PTSD group, compared to the nonPTSD group. SDNN (r=-0.209, p=0.013), RMSSD (r=-0.211, p=0.012) and LNHF (r=-0.168, p=0.046) were correlated with PCL5 in only supine position. **Conclusion:** PTSD patients showed reduced heart rate variability compared to nonPTSD patients, associating PTSD with involvement of autonomic nerve system activity. Although head-up tilt testing might be not more available than supine position testing for measurement of HRV with PTSD patients in this study, HRV might be a usable physiological parameter of assessing and monitoring of autonomic function in PTSD patients.

NO. 36

COMPARISON OF NEUROCOGNITION BETWEEN POSITONAL OSA PATIENTS AND NONPOSITIONAL OSA PATIENTS IN THE KOREAN ELDERLY

Poster Presenter:Moon Yong Chung, M.D., Ph.D.
Lead Author: Suk-Hoon Kang, M.D.
Co-Author(s): Hae Gyung Chung, Jin Hee Choi, Tae Yong Kim, Hyung Seok So, Joo Eon Park

SUMMARY:

OBJECTIVES: Obstructive sleep apnea (OSA) is the most common type of sleep breathing disorder in the elderly and is classified as positional sleep apnea (POSA) and nonpositional sleep apnea (NPOSA) according to the apnea-hypopnea index (AHIx), changed by sleep position. This study aimed to compare neurocognitive functions between the two groups in the Korean elderly population. **Methods:** Forty-four subjects in OSA patients with total AHIx≥5 participated as criteria for POSA (n=25) with (1) supine position AHIx/non-supine position AHIx≥2 and (2) total AHIx≥5 or not (NPOSA, n=19). All participants completed a clinical interview by a physician and neurocognitive function assessments, including the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease neuropsychological battery and other executive function tests. Mann-Whitney U and chi-square test

was done to compare neurocognitive functions and sleep characteristics with polysomnography between the two groups. **Results:** No significant difference was found in demographic and clinical characteristics between the two groups. However, the NPOSA group had more decline than the POSA group in Boston naming test (p=0.034), digit span test (p=0.001), go-no-go test (p=0.042) and fist-edge-palm test (p=0.007). **Conclusion:** In this study, NPOSA patients were found to have lower cognitive functions compared to POSA patients. This finding suggests position therapy for OSA has potential for prevention of cognitive dysfunction in OSA patients. A larger sample and a long-term follow-up study might be needed.

NO. 37

BIPOLAR DISORDER SEVERITY ROBUSTLY RELATED TO ILLNESS DURATION AND EPISODE ACCUMULATION

Lead Author: Saloni Shah, B.S.
Co-Author(s): Dong Yeon Park, M.D., Shefali Miller, M.D., Farnaz Hooshmand, M.D., Laura D. Yuen, B.A., Po W. Wang, M.D., Terence A. Ketter, M.D.

SUMMARY:

Objective: Assess illness severity, clinical correlates and predictors of unfavorable illness duration and episode accumulation considered concurrently in bipolar disorder (BD). **Methods:** Stanford BD Clinic outpatients enrolled during 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation. Two-step cluster analyses and prevalence and clinical correlates of unfavorable versus favorable illness duration and episode accumulation (i.e., illness duration≥15 years and episode accumulation≥10 episodes versus illness duration<15 years and episode accumulation<10 episodes) were examined to assess the strength of illness duration and mood episode accumulation considered concurrently as a marker of illness severity in relation to other BD illness characteristics. Forward selection logistic regressions modeled predictor variables for unfavorable versus favorable illness duration and episode accumulation. **Results:** Among BD outpatients, 44.2% (199/450) had both unfavorable illness duration and episode accumulation, and 26.4% (119/450) had both favorable illness duration and episode accumulation, while the remaining 29.3% (132/450) had combinations of favorable and unfavorable illness duration and episode accumulation. Cluster analyses indicated that illness duration and episode accumulation considered concurrently was the most robust combination of illness characteristics contributing to illness severity, with favorable, unfavorable, and combinations of favorable and unfavorable illness duration and episode accumulation accurately determining illness severity, as assessed by cluster analyses, in 82.1% of patients. Furthermore, unfavorable illness duration and episode accumulation considered concurrently was significantly related to 89.5% (17/19) of unfavorable illness characteristics and current mood symptoms. Regression indicated that of the correlates of unfavorable illness duration and episode accumulation considered concurrently, the unfavorable characteristics childhood BD onset (OR=18.3, p<0.001), prior year rapid cycling (OR=7.1, p=0.002), prior suicide attempt (OR=5.1, p=0.005) and lifetime anxiety disorder (OR=3.2, p=0.018) combined with the favorable characteristic adult BD onset (OR=0.05, p<0.0001) best predicted (80.8%) the variance in unfavorable versus favorable illness duration and episode accumulation. This study was limited to American tertiary bipolar disorder clinic referrals. **Conclusion:** In BD, unfavorable illness duration and episode accumulation considered concurrently was a robust illness severity marker. Likelihood of membership in the unfavorable (≥15 years illness duration and ≥10 episodes) versus favorable (<15 years illness duration and <10 episodes) groups was increased by the unfavorable characteristics childhood BD onset, prior year rapid cycling, prior suicide attempt and lifetime anxiety disorder and decreased by the favorable characteristic adult BD onset.

INTERNATIONAL POSTER SESSION 2

NO. 1
WITHDRAWN

NO. 2
WITHDRAWN

NO. 3

AGGRESSIVE BEHAVIOR IN PRADER WILLI SYNDROME

Lead Author: Muhammad Khan, M.D.
Co-Author(s): Edward Hall, M.D., Mohammed F. Rahman, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Prader Willi Syndrome (PWS), which was first described in 1956, is a complex neurodevelopmental disorder that affects approximately 1 in 20,000 births. The majority, close to 95%, of PWS is caused by a deletion of paternally inherited genes or maternal uniparental disomy at chromosome 153. PWS involves multiple systems, which manifest in endocrine, neurologic, behavioral and cognitive symptoms. Apart from the characteristic hyperphagia, other challenging behaviors that have been described include temper tantrums, skin picking, compulsivity, fluctuations in mood and disruptive behavior. Studies have shown that PWS patients exhibit distinct neural features associated with hyperphagia: hyper-activations in subcortical reward circuitry and hypo-activations in cortical inhibitory regions. Some studies have shown the benefits of using psychotropic medications such as SSRIs, mood stabilizers and atypical antipsychotics to manage tantrums, irritability and repetitive behavior. They discuss that certain atypical antipsychotics (respiradone) have been shown to curb the impulsivity, aggression and anger outburst in PWS patients. **Objective:** The purpose of this report is to evaluate the effectiveness of psychotropic medication in the management of aggressive homicidal behavior seen in PWS patients. **Case:** We report the case of a 15-year-old Caucasian male who has been admitted to Bergen Regional Medical Center for aggressive behavior towards his caregivers. He has demonstrated homicidal actions, including the use of a knife when not provided with food to appease the classic insatiable appetite of PWS patients. **Conclusion:** Studies have shown the possible role of using medications to improve the behavioral and psychological challenges seen in patients with PWS. Though primary emphasis in care should focus on behavioral intervention, psychotropics can be an adjuvant to corrective therapy in patients demonstrating aggression.

NO. 4
WITHDRAWN

NO. 5
CASE REPORT ON A CASE OF MANIA IN AN INDIVIDUAL WITH NEWLY DIAGNOSED MULTIPLE SCLEROSIS
Lead Author: Ganesh Kudva, M.B.B.S.

SUMMARY:
As the most common long-standing neurological condition in young adults in the United States, Multiple Sclerosis is known to be associated with a number of neuropsychiatric conditions. One of the less commonly reported associations is that between Multiple Sclerosis and Mania with Psychosis. In this case study, we will present a case of a young lady who was admitted to an inpatient psychiatric facility with Mania with Psychotic Features. She was subsequently found, on neuroimaging and evaluation of cerebrospinal fluid, to have Multiple Sclerosis. We also evaluate the treatment strategies used in her care and evaluate the etiology, clinical course, prognosis and treatment options available for individuals with Multiple Sclerosis who also have Mania.

NO. 6
SUICIDAL BEHAVIOR IN THE DEPARTMENT OF GENERAL MEDICAL EMERGENCY
Lead Author: Jaime M. Kuvischansky, M.D.
Co-Author(s): Leonardo Hess, M.D., M.Sc., Manuel Francescutti, M.D., Gustavo Ruiz, M.D., Yanina Tejera, M.D., Julia Javkin, M.D., Antonela Nasello, M.D., Romina Martinangeli, M.D., M. Jimena Matacín, M.D., Maricruz Santorini, M.D.

SUMMARY:
Objective: This study aims to 1) Characterize the epidemiology of individuals with suicidal behavior; 2) Improve the management in this situation; 3) Define a hypothesis of the methods used in suicide attempts. **Background:** A suicide attempt is defined as any act in which a person causes himself injury or damage with the aim of dying, no matter which method was used and regardless of the result of the attempt. Suicidal behavior includes a wide spectrum: the ideation, the development of a plan and the possible consummation of the act. Suicidal ideation is usually a decompensation found in a variety of mental illnesses and/or states of intoxication, although it is not pathognomonic for a specific mental illness. Usually, the first contact these patients have with medical attention is through emergency medical services, where the initial diagnosis and treatment is given. This is an observational study of patients admitted to the emergency department within two years. A total of 91 admissions were registered for attempted suicide, using as variables gender, age, background, method chosen, period of the year and day of the week. It was also taken into consideration the patients' outcome since the hospitalization until discharge. **Methods:** This is a retrospective and observational study based on 91 patients

hospitalized in the emergency department of "Sanatorio Parque," Rosario, Santa Fe, Argentina. The information was collected for a period of two years (January 2, 2012–February 28, 2014) through medical records. The data of different variables are included in an Excel table analyzed with GNU-PSPP (statistical analysis of sampled data), and graphics were made with Grace (XY plotting tools). **Results:** The study was made among 91 patients (71 women, 20 men) hospitalized in the emergency department for a suicide attempt. The average age was 31 years old for women (SD=9.3) with a range from 15 to 55 years old. The average age for men was 39 years old (SD=13) with a range from 20 to 62 years old (P <0.05). Drug overdose was the most frequent method used; benzodiazepines (alone or mixed with alcohol) were in first place. 53 of these patients had already been hospitalized for previous attempts and 42% for mood disorders. 20% of the admissions were during January and 23% on Monday. 63 individuals were hospitalized for 24 hours (minimum recommended by guides), 10 requested a voluntary discharge, 53 continued treatment hospitalized and 28 did an outpatient treatment. **Conclusion:** This study is from a representative population and is useful for comparative research. The data collected characterize frequent variables in this population. The information gathered intends to provide tools for management of suicide attempts and for future studies.

NO. 7

DIFFERENTIAL RESPONSE STYLE ON THE PERSONALITY ASSESSMENT INVENTORY ACCORDING TO COMPENSATION-SEEKING STATUS IN PATIENTS WITH TRAUMATIC BRAIN INJURY

Lead Author: Sang Yeol Lee, M.D., Ph.D.
Co-Author(s): Seung-Ho Rho, M.D., Ph.D., Yeon-Jin Kim, M.D., Hye-Jin Lee, Ph.D.

SUMMARY:

Objective: This study examined the characteristics and differences of PAI (Personality Assessment Inventory) profiles in compensation-seeking (CS) and treatment-seeking (TS) patients with traumatic brain injury (TBI) and assessed which items show such differences in clinical meaning. **Methods:** 36 TBI patients visited in Wonkwang University Hospital were selected. The patients were categorized as compensation-seeking TBI patients (n=22) and treatment-seeking TBI patients (n=14). The PAI scales and subscales were used to compare differences between the two groups. t-verification for each variable and comparison analysis were performed. **Results:** 1) In validity scales, the CS group showed significantly higher NIM scores and significantly lower PIM scores compared to the TS group. 2) In full scales, the CS group showed significantly higher SOM, ANX, ARD, DEP and SCZ scores than the TS group. 3) In subscales, the CS group showed significantly higher SOM-S, ANX-A, ARD-P, DEP(-C, A, P), (MAN-I), PAR-H, SCZ(-T, P), BOR(-A, N) and ANT-S scores compared to the TS group. 4) In supplementary scales, the CS group showed significantly higher SUI, NON and AGG-P, and significantly lower RXR scores than the TS group. **Conclusion:** There were significant differences in PAI scales with validity scales, some full, and subscales, according to compensation-seeking status in TBI patients. CS patients tended to exaggerate their symptoms on PAI and showed higher scores representing their somatic preoccupation and emotional distress. These results show the possibility of using PAI as reflecting the significant differences between the two groups.

NO. 8

RELATIONSHIPS BETWEEN PSYCHOPATHOLOGY AND TATTOOS IN THOSE RECEIVING PHYSICAL EXAMINATION FOR CONSCRIPTION AT KOREAN MILITARY MANPOWER ADMINISTRATION

Lead Author: Sang Yeol Lee, M.D., Ph.D.
Co-Author(s): Young-Hoon Cheon, M.D., Seung-Ho Jang, M.D., Hye-Jin Lee, Ph.D.

SUMMARY:

Objective: This study was aimed to discover the correlation between those getting tattoos and their psychopathology relating to their delinquent behavior and emotional problems. **Methods:** Data for this study was collected from 19-year-old men who were receiving a physical examination for conscription at the Korea Military Manpower Administration. 400 data sheets were collected among them. All of the subjects were evaluated on the following measures: sociodemographic variants, Juvenile Delinquency Scale, State-Trait Anger Expression Inventory, Beck Depression Inventory, State-Trait Anxiety Inventory, and Positive Affect and Negative Affect Schedule. **Results:** In comparison to those without tattoos, those with a tattoo scored higher in the scales that were related to delinquency, anger, depression and negative emotion. Furthermore, there were positive correlations between the number of tattoos and the scores for the Juvenile Delinquent Tendency and

Behavior Scale, as well as on the State-Trait Anxiety Scale. **Conclusion:** Those with tattoos in Korea had experienced anger, anxiety and depression more strongly in comparison to those without tattoos. These results recommend that tattooed males in Korea should be evaluated more on their regarding psychopathology compared to those without tattoos.

NO. 9

STANDARDIZED PATIENTS IN PSYCHIATRY EDUCATION AND CHANGES IN PERCEPTIONS OF THEIR OWN HEALTHCARE EXPERIENCES

Lead Author: Rathi Mahendran, M.Ed., M.Med.
Co-Author(s): Chua Shi Min, Joyce Y.S. Tan, Haikel Lim, Swapna Verma, Kua Ee Heok

SUMMARY:

Background: Little attention has been paid to the consequences of role-playing psychiatry scenarios despite the increasing reliance on standardized patients (SPs) for training and examinations. In particular, does role-playing impact SPs' experiences with their own health care providers? This study determined SPs' feelings about their health care experiences after serving as SPs. **Methods:** A cross-sectional self-report questionnaire design was used. Demography, decisions to role-play for medical education and years of experience as an SP were determined. The Attitudes Scale, which determines overall attitudes, perceptions of understanding, communications and comfort with one's doctor, was used. The study had Ethics approval. **Results:** Preliminary findings from N=52 (51.9% female, 73.1% Chinese, 28.8% aged between 61 to 75, 46.1% with a bachelor's degree/above and 82.7% with 1 to 5 years' role-playing experience) are presented. All participants indicated they had benefitted from role-playing: 88.5% were more aware of medical information; 78.8% were more knowledgeable about their own health; 61.5% reported they were more understanding and supportive of people with health issues. The top five most common psychiatric conditions SPs had role-played were depression (61.5%), anxiety (59.6%), obsessive compulsive disorders (40.4%), schizophrenia (36.5%) and a suicidal patient (34.6%). Amongst the most challenging for SPs were playing a suicidal patient (83.33%), delusional disorders (70%), schizophrenia (68.4%), death of a family member (66.67%) and alcohol and drug abuse (55.56%). With nonparametric Mann-Whitney U Test, overall Attitudes scores were significantly positive in those who role-played OCD (p=0.049) and delusional disorder (p=0.031) scenarios. Significant changes in understanding their doctors occurred in those who had role-played OCD (p=0.041), in communication, after depression scenarios (p=0.036) and schizophrenia roles (p=0.05) and comfort relating to their doctors in those who role-played delusional disorders (p=0.028). **Conclusion:** Role-playing psychiatric scenarios can be challenging but can benefit SPs by positively influencing perceptions of their own health care providers.

NO. 10

WITHDRAWN

NO. 11

WITHDRAWN

NO. 12

WITHDRAWN

NO. 13

INTERNATIONAL CASE CONFERENCE: INTERPLAY OF CHINESE CULTURE, RELIGION, AND PSYCHOSIS

Lead Author: Kathy Niu, M.D.
Co-Author(s): Margaret Tuttle, M.D., Xiaoduo Fan, M.D., M.P.H., M.Sc.

SUMMARY:

Background: China is a country with a diverse culture and various religions including Taoism, Buddhism, Confucianism, Christianity, Islam and local folk religions. Beliefs may include meditation to a higher level of awareness, reincarnation, chi (good and bad energy), and communication with or channeling the influence of gods and spirits through calligraphy/paintings or speaking in a heavenly language. For those who do not share the same religion, these beliefs may be interpreted as delusions (fixed and false) and hallucinations (hearing advice from spirits). To those within the same religion, the beliefs and experiences are not only normal, but expected or a source of pride. We illustrate this conflict of conceptualization through a case of a Chinese-American female. This case was originally presented as a live video case conference held between UMass Memorial Medical Center (Worcester, MA) and Shanghai Mental Health Center (Shanghai, China). Of note, the patient's primary care physician, psychiatric consultants, neuropsychiatric consultant, visiting psychiatrist from China, and participants of the video conference all have Chinese backgrounds or interests. This was a

unique opportunity to formulate a complex case with expertise and sensitivity. **Case:** A 70-year-old married Chinese-American female with a past psychiatric history of Psychotic Disorder NOS presented with a chief compliant of a “pulse on her head” and insomnia. She did not seek mental health care sooner because she did not believe she was “crazy,” but allowed her PCP to prescribe olanzapine for her sleep. She believes the pulse is due to a bad spirit that was sent because she had failed a series of tests to advance her meditation about 15 years ago. Her upbringing included beliefs from Taoism, Buddhism and Christianity. Both she and her family have had encounters with spirits by hearing their voices, and her family members have advanced further in being able to produce spiritual paintings and speak in tongue, a “heavenly language." She refers to the Holy Canon and the Red Swastika Society, which are real entities. There were disagreements in her diagnosis, but it was ultimately decided that this was not schizophrenia due to the lack of impaired functioning and due to the consistency within her religious beliefs per collateral information. **Conclusion:** We note there are differences in diagnostic schemes between the CCMD3 (Chinese Classification of Mental Disorders 3) and the *DSM-5* (Diagnostic and Statistical Manual of Mental Disorders 5), differences in interpretations of symbols (e.g., the swastika), and differences in specific beliefs contained in the major religions. These factors, along with stigma, complicate the clinical picture. However, by understanding the patient’s cultural explanatory model and communicating to the patient within that paradigm, we can better arrive at an accurate diagnosis and treatment and with better patient adherence to a medication regimen.

NO. 14

USE OF EMERGENCY ROOM SERVICES AND RISK OF SUBSEQUENT HOSPITALIZATION IN SCHIZOPHRENIA PATIENTS: RESULTS FROM THE CGS PROSPECTIVE COHORT STUDY

Lead Author: Clementine Nordon, M.D., Ph.D.
Co-Author(s): Kertous M., Abenhaim L., Vaiva G., Grimaldi-Bensouda L.

SUMMARY:
Objective: To identify the factors associated with an increased risk of visits to the emergency room (ER) in schizophrenia (SCZ) patients and to explore any causal association between ER visits and a subsequent hospitalization. **Methods:** Data were retrieved from the “Cohorte Générale Schizophrénie” (CGS), a longitudinal cohort including 1,859 SCZ patients in France nationwide, who were followed-up during at least 12 months. Patients with an 18-month follow-up and who were not hospitalized during the whole 18-month period were included in the present study. First, the characteristics of patients who visited the ER between 6 and 12 months and of patients who did not were compared, using logistic regression models providing Odds Ratios (OR) and their 95% Confidence Interval (95% CI). Second, the causal association between visits to the ER between 6 and 12 months and a hospitalization between 12 and 18 months was explored using a Marginal Structural Model (MSM), taking account of time-varying and time-fixed confounders. **Results:** 1,122 SCZ patients had been followed-up for at least 18 months (60.3% of the initial CGS sample) and were included in the study: 340 (30.3%) were female patients, the mean age was 38.9 (standard deviation=11.2), and 785 (77.5%) patients had an SCZ disorder developing for more than five years. Between 6 and 12 months after baseline, 70 (7%) patients visited the ER at least once. The baseline factors associated with increased odds of visiting the ER were a younger age (adjusted OR, 0.96; 95% CI, 0.93–0.98) and a higher suicidal risk (aOR, 2.83; 95% CI, 1.27–6.35). Between 12 and 18 months after baseline, 110 (11%) patients were hospitalized for psychiatric reasons. Nonadjusted analyses revealed that ER visits were associated with a significantly higher likelihood of being hospitalized (OR, 2.14, 95% CI, 1.11– 3.89). When adjusting for time-varying confounders (using the MSM), ER visits neither increased nor decreased the risk of hospitalization in the subsequent period (aOR, 1.0; 95% CI, 0.9–1.2). **Conclusion:** A younger age and a higher suicidal risk are associated with greater use of ER services in SCZ patients. However, no causal relationship was evidenced between ER visits and subsequent hospitalizations. One interpretation could be that ER visits and hospitalizations are not related to the same medical needs.

NO. 15

ANTIEPILEPTIC DRUGS, RISK OF SUICIDE ATTEMPTS AND THE IMPACT OF UNDERLYING MEDICAL CONDITIONS

Lead Author: Clementine Nordon, M.D., Ph.D.
Co-Author(s): Lamiae Grimaldi-Bensouda, Michel Rossignol, Virginie Boss, Xavier Kurz, Frederic Rouillon, Lucien Abenhaim

SUMMARY:
Objective: To explore the association between antiepileptic drug (AED) use and risk of suicide attempt (SA) in adults, taking account of psychiatric and neurological condition. **Methods:** A case-control study was performed in France nationwide between June 2008 and September 2012. Cases were adult patients with one incident episode of suicide attempt requiring a hospitalization for at least 12 hours, occurring within the month preceding recruitment and with no other episode in the last 12 months (n=506). Controls were patients without no history of suicide attempt in the same period, seen by a general practitioner (GP) (n=2829) and matched to SA cases by age and sex. Information on AED use, socio-economics, lifestyle and personal medical history was collected by the psychiatrist for cases and by the GP for controls. Data on drug exposure was self-reported by participants through standardized patient telephone interviews. The association between AED use (all AEDs) and risk of suicide attempt was explored using logistic conditional regression and adjusted analyses after stratification on depression and neurological status. **Results:** There was a crude association between AED use in the 12 months preceding the index date and risk of suicide attempt (Odds Ratio [OR], 3.1; 95% Confidence Interval [CI], 2.1–4.5). In patients with current and/or past depression, AED use was associated with risk of suicide attempt, but this was no longer the case when clonazepam was excluded from the group of AEDs (OR, 0.9; 95% CI, 0.5–1.7). In patients with epilepsy, migraine or chronic neuropathic pain, no significant association was found between AED use and risk of suicide attempt (OR, 1.3; 95% CI, 0.6–2.8). **Conclusion:** The association observed between AEDs and SA is explained by underlying psychiatric or neurological conditions.

NO. 16

CHILDREN AND ADOLESCENT VICTIMS OF HUMAN TRAFFICKING: ROLE OF PHYSICIAN IN IDENTIFICATION AND TREATMENT

Lead Author: Joshua Okoronkwo
Co-Author(s): Chidinma Isinguzo, M.D., Chijioke Isinguzo, M.D.

SUMMARY:
Background: Human trafficking victims are isolated, have limited (or no) social support, are severely traumatized, and have increased risk for mental health disorders. Victims may even identify death as a means of escaping their desperate situation and, hence, are at risk of suicide. Studies have shown that victims will prefer to speak with a medical professional rather than a law enforcement officer. It is imperative that physicians have sufficient knowledge and tools to identify and treat this special population. **Methods:** This presentation provides an overview of the current trends of human trafficking victims, screening methodology and appropriate treatment. **Results:** The Trafficking Victims Protection Act (TVPA) was passed in 2000, yet the true incidence/prevalence of victims of trafficking has been difficult to obtain. The reasons are obvious: human trafficking is a crime that thrives in secrecy; the victims are constantly shadowed and watched by their captors; most have no valid identification or immigration documents and are scared to testify. There has continued to be an increase in the number of detected child victims, and as per the United Nations 2014 report, 33% of victims are children. Children and adolescents are especially vulnerable to trafficking if they have certain predisposing factors, such as runaways from home, past history of abuse/neglect, extreme poverty and substance abuse. The victims are subjected to long hours of labor or transported to different cities for prostitution. Some victims are abused, intermittently starved, sleep deprived or provided very little, irregular meals. They are housed in unsanitary environments due to the underground nature of human trafficking. They have little or no access to health care, and even if they are brave enough to seek medical help, they can easily slip “in-between the cracks” of the health care system. **Conclusion:** It is vital that physicians recognize the possible presentations of these victims, as the trip to the hospital might be the only time that they are separated from their captors. Some common presenting symptoms are suicide attempts, depression, PTSD, panic attacks, broken bones/injuries (from beatings), genitourinary symptoms, STDs (from prostitution, rape), malnutrition, and dental complications. A “red flag” during their presentation is a “cousin” or “friend” who insists on been present in the examining room.

NO. 17

ASSOCIATIONS BETWEEN RECOGNITION OF FACIAL EXPRESSIONS OF EMOTION, ACTIVE ALCOHOLISM AND ASSOCIATED CLINICAL CONDITIONS

Lead Author: Flávia L. Osório
Co-Author(s): Mariana F. Donadon, Jaime E.C. Hallak

SUMMARY:

The dependence on and excessive consumption of alcohol may be associated with several damages. At the cognitive level, it highlights deficits in the recognition of facial expressions of emotion (RFEE), and at the clinical level, it leads to the conditions of hepatopathy and cirrhosis. Previous studies showed large damage in RFEE for both active alcoholics and abstinent, but with some differences. The impact of possible clinical conditions associated with alcoholism was not considered when it comes to performance in RFEE tasks. The objective of this study is to evaluate, in a sample of 100 male individuals with a current diagnosis of alcohol dependence (X=29.36 years; SD=11.27), accuracy and response time at the RFEE depending on two clinical liver diseases associated with use of alcohol: cirrhosis (N=85) and hepatopathy (N=25). We used a computational dynamic task involving six basic emotions (happiness, sadness, fear, disgust, anger, surprise). Data were analyzed by statistical comparison of these groups (t Student). The results showed that individuals with cirrhosis performed better in different aspects of RFEE than in those with alcoholic hepatopathy, with lower response time and higher accuracy for the emotions in general and especially for sadness and fear ($p < 0.05$). In contrast, it was observed that average alcohol consumption is lower in subjects with cirrhosis (X=7.46; SD=4.76) compared to patients with hepatopathy (X=8.24; SD=3.82), although this difference was not statistically significant (p=0.28). These findings are interesting compared to previous literature because individuals with cirrhosis have a tendency to present higher deficits at cognitive functions compared to those with hepatopathy, leading to the hypothesis of greater losses in RFEE. On the other hand, this study becomes relevant to the finding that this group of cirrhotic patients with better performance makes use of a smaller amount of beverage. This decrease in use might be associated with several factors; among them we highlight the reduction of the alcohol-metabolizing enzymes or even a possibility of recapture of the losses and/or cognitive regeneration in cirrhosis after decreasing alcohol consumption.

NO. 18

ASSESSMENT OF THE ACUTE EFFECTS OF OXYTOCIN ON MUSIC PERFORMANCE ANXIETY: PRELIMINARY RESULTS INVOLVING A SITUATION OF SIMULATED PERFORMANCE

Lead Author: Flávia L. Osório

Co-Author(s): Ana Elisa Medeiros Barbar, Mariana F. Donadon, José Alexandre S. Crippa

SUMMARY:

Music performance anxiety (MPA) is defined as a persistent and distressing experience that involves apprehension linked with musical performance in public, whether individual or collective. According to the cognitive model, anxious individuals concentrate their anxiety in situations that involve social scrutiny, favoring distorted, dysfunctional and negative interpretations of that situation followed by experiences of physiological symptoms associated with the exposure. The most commonly used substances in the pharmacological management of MPA are beta-blockers and benzodiazepines. However, these options are not fully efficient and cause relevant side effects that interfere mainly with performance. Therefore, investigations on alternative substances to treat MPA are highly opportune. Our objective was to assess the acute effects of oxytocin (OT) on physiological and cognitive variables during an experimental model of simulated performance. We assessed 12 musicians pretreated with intranasal OT (24 UI) or placebo in a crossover trial involving an experimental situation of public performance. Cognitive and physiological measures (heart rate, blood pressure and salivary cortisol) were recorded before and during performance (anticipatory anxiety and performance anxiety). Statistical analyses were made using the software Stata Direct. The results showed no effects of OT on physiological symptoms ($p > 0.190$). In respect to anticipatory anxiety, however, we found a tendency for OT to reduce negative cognitions associated with music performance (p=0.068). No side effects were reported by musicians throughout the trial. These findings support previous evidence that OT attenuates negative cognitive responses to stress. These tendencies, if confirmed through the expansion of the sample, have important implications for the practice of amateur and professional musicians who could benefit from interventions like the one described, possibly with a lesser impact of side effects.

NO. 19

CEREBRAL CALCIFICATION AS A DIFFERENTIAL DIAGNOSIS FOR PSYCHIATRIC DISORDERS: A REVIEW OF THE LITERATURE

Lead Author: Ossama Tawakol Osman, M.D.

Co-Author(s): Ghanem Al Hassani, Amir Mufaddel

SUMMARY:

Background: Central nervous system (CNS) calcifications can occur in a wide range of conditions with different etiologies. Calcifications can occur as physiologic, dystrophic, congenital or vascular calcifications. The aim of this presentation is to discuss differential diagnosis of psychiatric conditions associated with CNS calcifications. **Methods:** A literature review using Medline Search was conducted for the past decade using the key words cerebral calcifications, basal ganglia calcifications, intra-axial calcifications, extra-axial calcifications and psychiatric symptoms. The type, duration and course of psychiatric symptoms were reviewed and collated. **Results:** Brain calcifications can occur as intra- or extra-axial calcifications. Structures commonly involved in intra-axial clarifications are the basal ganglia and the cerebellum. Calcifications can be idiopathic/genetic such as those occurring in Fahr's disease. Psychiatric symptoms in individuals with basal ganglia calcifications can present with variable clinical features including cognitive decline, auditory hallucinations, delusions, irritability, aggression, depressed mood, anxiety, personality changes and suicidal thoughts. Psychiatric symptoms can be acute or chronic, and some patients received clinical psychiatric diagnoses including dementia, schizophrenia-like psychosis, mood disorders, frontal lobe syndrome, and mental retardation. Extra-axial calcifications such as those occurring in falx cerebri and the pineal gland can also be associated with psychiatric symptoms. Rare conditions with falx cerebri calcifications such as Gorlin-Goltz syndrome can present with acute course or with relapses and remissions. **Conclusion:** Radiologic investigations are useful tools to exclude organic pathology in patients presenting with psychiatric symptoms. For psychiatric patients who present with CNS calcifications, the location of calcification and the clinical psychiatric and systemic presentation are of vital importance in diagnosis.

NO. 20

ALCOHOL DEPENDENCE AND PSYCHIATRIC COMORBIDITY

Lead Author: Jerome Palazzolo, M.D., Ph.D.
Co-Author(s): Julia Vignoli, Andre Quaderi

SUMMARY:

Objective: This study determines the prevalence of comorbidity of psychiatric disorders and alcohol dependence and shows that mental illnesses are an important factor in the pathogenesis of alcohol dependence. The objective of this research is to show two things: first, that the use of alcohol is a means of self-medication in patients with psychiatric disorders, second, that there are deep narcissistic failures in alcohol-dependent patients driving the need to self-medicate. **Methods:** The first part of this study is based on a quantitative approach through 167 psychiatric patients, realized in a psychiatric clinical in Corsica from July to September 2014. The study first assessed the prevalence of alcohol-dependence patients among psychiatric subjects hospitalized during the last three months, then the prevalence of self-medication among them. The second part of this study is conducted on 6 patients hospitalized in a specialist detoxification unit near Nice from January to February 2015 and is based on qualitative and quantitative approaches. The qualitative approach is based on analysis of speech in group therapy and the quantitative approach on psychodynamic analysis of projective tests: the Rorschach and the TAT. **Results:** Out of 167 psychiatric patients hospitalized, 16 percent were found to have alcohol dependence, and among them, 74 percent used alcohol as a means of self-medication. Of the six selected alcohol-dependent patients, all presented deep narcissistic failures such as abandonments, parental divorce, emotional deprivation, failed parental imago or posttraumatic stress disorder (PTSD) and used alcohol to find themselves a solution to their psychic suffering. **Conclusion:** Results show that alcohol-dependence remains highly prevalent with psychiatric disorders. This comorbidity appears due especially to self-medication. Individuals use alcohol or drugs in an attempt to relieve their psychic pain, but the risk of self-medication is to develop an addiction. Generally, patients with dual diagnosis are more difficult to treat because they need an integrated treatment approach that addresses both problems.

NO. 21

CONTRIBUTION OF NEW TECHNOLOGIES IN THERAPEUTIC MEDIATION WITH ELDERLY PEOPLE

Lead Author: Jerome Palazzolo, M.D., Ph.D.
Co-Author(s): Camilla Barbini, Xavier Brundo, Sarah Bussiere, Gaelle Combe, Oceanne Levenez, Serge Ricaud, Olivia Turnier, Andre Quaderi

SUMMARY:

Despite the supposed gap between elderly people and technology, the hypothesis of this essay is that thanks to our knowledge in modern technology, a

different care can be provided to seniors with memory complaints in the transition from normal to pathological aging. Beyond cognitive and medical approaches, this essay focuses on the psychological impact serious games and other technologies have on elderlies if introduced by a therapeutic mediation proposal. Based on a psychoanalytic definition of aging and therapeutic mediation, we suppose that technology could become a new media serving this nondrug approach of elderly care. On one hand, the use of KODRO in a day center for elderlies with memory disorder will bring some clinical thoughts regarding the position of the subject towards technology as well as aging. On the other hand, this essay offers a theoretical thought regarding the effects of serious games and other technologies on elderly people taken in the transition from normal to pathological aging. Among different results, the first that appears is the fact that technology seems to represent a missing bond between elderlies and the youth, as if technology presented as a therapeutic medium could support the aging symbolization of the seniors. Thus, technology and, in a broader therapeutic sense, mediation could come across as a way to act, slow down and maybe one day prevent pathological aging evolution. However, if it seems to be a bright future for technology, some elderlies are not sensitive to this new care method and sometimes pathology is an obstacle to the use of technology, as it is not understood. More importantly, some ethical considerations remain regarding the use of technology in geriatric care.

NO. 22

DRUG-FREE APPROACH IN ALZHEIMER'S DISEASE: A MUSICAL SUPPORT OF BEHAVIORAL DISORDER DURING DAILY CARE

Lead Author: Jerome Palazzolo, M.D., Ph.D.
Co-Author(s): Manon Abiteboul-Casali, Vincent Collato, Stéphanie Granger, Alexandre Granjard, Andre Quaderi

SUMMARY:
The HAS (French high health authority) recommends a drug-free approach to treating Alzheimer's disease, especially for the support of behavioral disorders during crisis situations. The emphasis of this approach is related to the patient's environment. Therefore, an environment change should bring several effects on the patient. A musical support represents such a change and is a recommended care method for the HAS. Regarding those recommendations, a musical support has been used with a nursing home patient presenting severe dementia. The behavioral disorder especially occurred during the daily cares (shower). Excepting to determine whether or not a certain type of music was more operant, we compared two sorts using the following research: Goddaer and Abraham (1994) studied the effects of relaxing music on behavioral disorders with patients of a nursing house. E. Lecourt used the term ISO (or SIP)—the sound identity of a patient—discovered by Benenzon (1992) to designate that the musical sensitivity of a person is related to its own personal history. Three situations were proposed. First, in the control condition, the shower was conducted without music. In a second case, relaxing music was used. At last, music corresponding to the patient's ISO was broadcast—in this case, philharmonic classical music. The intensity of the behavioral disorders was measured. The results showed that relaxing music had no effect on behavioral disorders, whereas ISO-related music allowed significant improvements. ISO can therefore represent an interesting track to support behavioral disorders of patients with Alzheimer's disease; even though it's more tedious, it can be seen as an alternative.

NO. 23

ANIMAL MEDIATION WITH THE HELP OF DOGS AND ALZHEIMER-TYPE DEMENTIA WITH APATHETIC BEHAVIOR PLACED IN INSTITUTIONS

Lead Author: Jerome Palazzolo, M.D., Ph.D.
Co-Author(s): Margaux Jacobson, Ameì□lie Paolino, Manon Luigi, Laetitia Girault, Florent Salducci, Andre Quaderi

SUMMARY:
Among subjects with Alzheimer's dementia, approximately 55% of patients are living with behavioral disorder associated with apathy in a long-term care facility. It is the most frequent behavioral symptom in Alzheimer's disease. The apathy is defined as a lack of motivation, loss of interest and productivity, affective-obtundation, and a withdrawal into self, leading gradually to a total dependence. To counter this apathetic behavior, a care model for nonmedicinal rapid and effective treatment is essential. As a part of our research, we took interest in apathetic patients suffering from Alzheimer-type dementia (ATD) placed in institutions, in order to demonstrate the institutions' interest and profits on the apathetic behavior. **Methods:** Our work is based on a longitudinal case study of four months, including one weekly

mediation session with a dog. Analytical data was collected through clinical interviews before, during and after the mediation sessions. Furthermore, apathetic behavior disorder was measured using the Apathy Inventory, along with the Scale for the Loss of Motivation in Elderly, before the introduction of the workshop, during and after. **Results:** This technique allows the patient to turn to its environment. It allowed here to show an increase in patient interactions and general motivation. It is a vector of emotions allowing a significant decline in emotional blunting. It is also an indicator of verbal and nonverbal communication between animals, the therapist and bystanders during and after the mediation. We can say this method slowed the associated social retreat and withdrawal of the patients suffering from dementia. This mediation has enabled an increase in patients' self-esteem, and its benefits have been observed at the behavioral level—emotional and attentional. One can also note that this is a stimulator of retrograde memory. The results show a disappearance of the apathetic state during the mediation with the animal, which remained constant during the two days following surgery. **Conclusion:** For ATD patients associated with an apathetic behavior, animal-assisted mediation can be identified as an unmedicated alternative that produces a large number of benefits, not only on a motivational, emotional and communicative level, but also on an attentional level, which improves mental condition and ultimately the patient's overall quality of life.

NO. 24

THE INTERPRETATION OF THE EVOLUTION OF THE GRASPING REFLEX IN DEMENTIA: COMMUNICATION OR SYMPTOM?

Lead Author: Jerome Palazzolo, M.D., Ph.D.
Co-Author(s): Deborah Baudry, Laurene Drljaca, Camille Guerard, Lisa Brillada, Andre Quaderi

SUMMARY:

Significant neurological deficits linked to Alzheimer's disease cause serious behavioural repercussions. The body being a means of communication mean in different ways, we can state that it is a vector of messages in the grasping behavior. Do grasping behaviors have a communication goal, or are they symptoms or of reflexes? We shall focus our research on the institutionalized and diagnosed moderate to severe Alzheimer's patients . We shall study the grasping behavior through an unmedicated and clinical approach. Our case studies show a communication goal on moderate to severe Alzheimer patients. However, regarding the last ones, unmedicated therapy through a Snoezelen environment is the proof of a decrease in the grasping behavior. The decrease of the phenomenon causes anxiety. In addition, the hypothesis of a behavioral and psychological symptom linked to dementia is set. Can we consider this reflex, similar to those of newborns, as a link to a bonding mother figure? The communication goal of the grasping behavior would thus have a different objective: the pursuit of bonds. As for when it's a symptom, this reflex would mean the loss of bonds.

NO. 25

FACTORS AFFECTING THE COSMETIC PLASTIC SURGERY INTENTION OF KOREAN UNIVERSITY STUDENTS

Lead Author: Hyemi Park, M.D.
Co-Author(s): Sang Ick Lee, M.D., Ph.D.

SUMMARY:

Objective: The purpose of this study is to show that the factors of gender role identity, temperament and character have an effect on the intention of plastic surgery in college students. In previous studies, the reported result was that body satisfaction and distortion have an effect on the intention of plastic surgery, and this study is to identify the mediation effect of these factors. **Methods:** 396 male and female university students participated. A self-administrated questionnaire was developed, which included sociodemographic characteristics, plastic surgery experience and intention, Korean Sex Role Inventory (KSRI), Multidimensional Body Self Relation Questionnaire (MBSRQ), Brief Body Dysmorphic Questionnaire (BBDQ), and Temperament and Character Inventory (TCI). Results were analyzed on SPSS to identify the effect of body image on plastic surgery intention by mediating body satisfaction and distortion with gender identity, temperament and character. **Results:** The higher the score of masculinity and femininity, the higher the satisfaction degree of body image, but there was not a mediation effect. Also, the higher the score of masculinity, the lower the degree of distortion of body image, but the feminine scores and body distortion were not significant; both of them had no mediation effect. Body image was partially mediated by novelty seeking and reward dependence and had no mediation effect on harm avoidance or persistence. The mediation effect of body satisfaction affected plastic surgery intention with a

temperament factor. The mediation effect of body image distortion was partially mediated by the effect of novelty seeking, and the others were not mediated. Body image was fully mediated on cooperativeness for the mediation effect of body satisfaction on plastic surgery intention to character, and it had no mediation effect on self-directedness and self-transcendence. The result of the mediation effect on body image distortion was fully mediated on self-directedness and cooperativeness and had no effect on self-transcendence. **Conclusion:** In this study, to identify the effect of gender roles, temperament and character on plastic surgery intention, we tested the mediated effect of body image distortion and satisfaction. The result is to verify the mediated effect on specific temperament and character factors. Systematic and comprehensive study of body image's effect on plastic surgery intention is needed through following studies.

NO. 26

BRAIN NEUROCHEMISTRY AS ASSESSED BY 1H-MRS IN UNMEDICATED OBSESSIVE COMPULSIVE DISORDER PATIENTS AND CHANGES AFTER 12 WEEKS OF ESCITALOPRAM TREATMENT

Lead Author: Arpit Parmar, M.D., M.B.B.S.
Co-Author(s): Pratap Sharan, Sudhir Khandelwal, Khushbu Agarwal, Uma Sharma, Naranamangalam R. Jagannathan

SUMMARY:

Objective: Obsessive compulsive disorder is one of the most common psychiatric disorders, yet its pathophysiology is not very clear. Many studies have been conducted to identify neurobiology of obsessive compulsive disorder (OCD), but very few studies are available on treatment-related responses in neurochemicals assessed by magnetic resonance spectroscopy (MRS). Our study estimated neurochemical changes occurring in OCD patients in response to pharmacotherapy with escitalopram and compared them with healthy controls in three brain areas (Caudate nucleus, anterior cingulate and medial thalamus) in an Indian setting. **Methods:** In the present study, we included subjects diagnosed with OCD (n=28) with total duration of illness <5 years as a study group and matched healthy controls (n=26). The inclusion criteria for the OCD group were right-handed individuals, aged 18-50 years, not on any specific treatment for OCD for last >8 weeks at intake with no other psychiatric comorbidity. A pre-post and case control design was employed in which OCD patients underwent 1H-MRS at baseline (before starting any treatment) and 12 weeks after treatment with escitalopram (n=21). Clinical assessment was carried out using a socio-demographic profile, a semi-structured proforma, Mini International Neuropsychiatric Interview, Yale Brown Obsessive Compulsive Scale (YBOCS) and YBOCS symptom checklist before as well as after treatment. Volume-localized 1H MR spectroscopy was carried out at three Tesla Philips MR scanners using 32-channel head coils. **Results:** On comparing the two study groups in terms of absolute neurochemical levels, Glx (Glutamate+Glutamine) levels were found to be higher in the OCD group as compared to controls in all three regions at a trend level ($p<0.1$). tCho levels were higher in the anterior cingulate cortex and medial thalamus of OCD subjects as compared to controls, and myo-inositol level was significantly higher in medial thalamus of OCD subjects as compared to controls. Glx level decreased significantly in the Caudate nucleus and medial thalamus regions, and levels of tCho decreased significantly in the medial thalamus region after 12 weeks of escitalopram treatment. **Discussion:** Cortico-striato-thalamic circuitry uses glutamate as a primary neurotransmitter along with GABA. The finding of increased glutamate levels in patients with OCD and a decrease after treatment further supports possible role of gluatamatergic pathway in pathogenesis of OCD and potential reversibility of such abnormality after treatment. Similarly, increased tCho and mI (both components of phospholipid sheath of neurons) supports the neurodegenerative hypothesis of OCD. **Conclusion:** We found increased tCho in the medial thalamus of OCD subjects, showing significant reduction after treatment. Our results suggest the possibility of improved neuronal integrity and the metabolic status of neurons with treatment. Studies on drug naïve subjects are warranted to clarify such changes.

NO. 27

THE USE OF ANTICHOLINERGICS IN PEOPLE WITH INTELLECTUAL DEVELOPMENTAL DISABILITY AND ITS IMPACT ON THE MANAGEMENT OF DEMENTIA

Lead Author: Rupal Patel, M.B.B.S.
Co-Author(s): Dr. Richard Hillier, Ph.D., M.B., Ch.B.

SUMMARY:

Background: People with intellectual developmental disability (IDD) are at a higher risk of developing dementia compared to the general population. In addition, life expectancy is increasing in this this

group and they are reaching ages at which dementia may develop. With increasing age, other comorbidities may occur that can necessitate treatment. Treatment of relatively common conditions such as urinary incontinence, hypersalivation and Parkinsonism may involve the use of anticholinergics. Therefore, many people being investigated for possible dementia may be on these drugs. Commonly used anticholinergics include oxybutynin, tamsulosin, hyoscine and mebeverine. In dementia, there is a loss of cholinergic neurons and decreased synaptic acetylcholine. Cholinesterase inhibitors are used to alleviate symptoms caused by this. Anticholinergics antagonize the acetylcholine in the brain and thus directly antagonize the effects of antidementia drugs. There is some evidence to suggest that anticholinergics are associated with an increased incidence of cognitive impairment in later life. **Methods:** We looked at the total population of adults with IDD being investigated for and treated for dementia within the London Borough of Richmond. We collected data on what drugs were being prescribed. In people with a diagnosis of dementia, we aimed to optimize the medication and review the use of any anticholinergics before the use of cholinesterase inhibitors was considered. We also considered other drugs that have secondary anticholinergic effects such as chlorpheniramine. **Results:** Here we present an overview of anticholinergic prescribing trends in adults with IDD being investigated for dementia over a five year period. We also report on case examples whereby anticholinergics were discontinued in order to improve the pharmacological management of dementia. **Conclusion:** Here we discuss the balance that has to be achieved between the management of physical health problems and management of dementia symptoms. In some cases, although cholinesterase inhibitors were either not indicated or found to be ineffective, discontinuation of anticholinergics led to improved cognitive functioning and quality of life.

NO. 28

BURNOUT AND ACADEMIC PERFORMANCE IN MEDICAL STUDENTS

Lead Author: Maria Beatriz Quintanilla, M.D., Ph.D.

SUMMARY:

INTRODUCTION AND OBJECTIVES: Medical students are under a lot of pressure and have to face many changes in their lives that may cause them to quit their studies. Our objective was to learn how self-esteem, burnout and engagement are related to their academic performance, and if they do experience burnout or depression. METHOD: Self-esteem (Rosenberg), Burnout (MBI), Engagement (UWES-17), Depression (Beck-D) and Anxiety (Beck-A) scales were applied to 185 medical students. The group was divided in two subgroups based on their academic performance according to their GPA (Grade Point Average) into high (n=86) and low (n=99) performance: HP and LP. Maximum GPA was 10. HP students' GPA was 9 or more. LP students were under 9. **Results:** Significant differences were found in Exhaustion, Cynicism, Efficacy (MBI burnout subscales), Depression (Beck-D) and Anxiety (Beck-A) scales. HP students obtained higher scores in Beck-A. Depression levels were within normal ranges in both groups. No significant differences were found in engagement, satisfaction with life or self-esteem scales, where results were also within normal ranges. Scores found in HP students in MBI subscales were higher than the media norms for similar groups. Correlations showed that high levels of dedication have significant correlation with high levels of absorption, satisfaction, self-esteem and low levels of depression. High levels of satisfaction and self-esteem have significant correlation with low levels of depression and anxiety. Higher levels of depression correlate with higher levels of anxiety. **Conclusion:** HP students had significant higher levels of burnout than LP students. Neither group showed pathological levels of depression, although significant differences were found between both groups. Results showed how HP medical students may experience exhaustion, burnout and anxiety but not depression. Self-esteem did not seem to impact on performance. Higher levels of burnout and anxiety were related to higher academic performance, and students must be followed-up in order to prevent further depression.

NO. 29

DEMENTIA IN INDIAN CINEMA: A NARRATIVE REVIEW

Lead Author: Badr Ratnakaran, D.P.M., M.B.B.S.
Co-Author(s): Dr. Sethulakshmi S. Anil, M.B.B.S.

SUMMARY:

Background: Indian cinema is known for portraying social, cultural and political issues, and this also includes issues in mental health. **Objective:** To review the portrayal of dementia in Indian cinema. **Methods:** Films were identified after discussion with various experts through in person, telephone and

email correspondence. Web databases were also checked to identify the films. **Results:** Ten films portraying balanced and unbalanced versions of dementia and its related issues have been identified. Caregiver issues have been discussed in the films. However, treatment and other interventions have not been discussed. **Conclusion:** It can be concluded that these films can be used as a resource for movie clubs as a part of teaching curriculum during postgraduate and undergraduate training. They can be an excellent medium to understand cultural issues related to dementia in the community.

NO. 30

INTERACTION BETWEEN CRP AND COGNITIVE FUNCTIONS IN RELATION TO APOE GENE POLYMORPHISM IN POSTMENOPAUSAL WOMEN

Lead Author: Kasia Gustaw Rothenberg, M.D., Ph.D.
Co-Author(s): I. Bojar, E. Humeniuk, D. Raczkiewicz, J. Owoc

SUMMARY:

Objective: The initiation and development of both cardiovascular as well as cognitive disorders is believed to be partly linked to inflammation. Specifically, C-reactive protein (CRP), a marker of chronic inflammation, has been associated with numerous clinical conditions, including cognitive decline. Whether CRP directly causes cognitive decline in the brain is not well examined. Speculatively, CRP may indirectly lead to cognitive impairment via promoting vascular disease. In another hypothesis, CRP is produced as a result of the inflammatory process linked to a myriad of lifestyle factors and is therefore simply a byproduct linked to adverse lifestyle. Similarly, cardiovascular as well as cognitive impairment are at increased risk in the presence of APOE 4 allele. Both inflammatory processes as well as APOE polymorphism independently seemed to play a role in often expeditiously progressive postmenopausal cognitive dysfunction. It seems interesting to explore the interplay of both factors in the etiology of postmenopausal cognitive functioning. In this study, the relationship between levels of cognitive function in relation to CRP level in the context of APOE polymorphisms were studied in the cohort of postmenopausal women. **Methods:** The group of 402 women was recruited to the study. The inclusion criteria were a minimum of two years after the last menstruation, FSH concentration 30 U/ml and no dementia signs on Montreal Cognitive Assessment (MoCA). Computerized battery of Central Nervous System Vital Signs (CNS VS) test was used to diagnose cognitive functions. APOE genotype was performed by multiplex PCR. The blood plasma was determined C-reactive protein (CRP). Statistical analysis was performed using STATISTICA software. **Results:** The level of cognitive functions in postmenopausal women depends on apolipoprotein E gene polymorphism and the concentration of C-reactive protein (CRP). Women homozygotous for APOE Îµ4/Îµ4 scored the lowest on cognitive testing and presented with higher CRP levels. **Conclusion:** Apolipoprotein E gene polymorphism may modify the relationship between CRP concentration and cognitive functions in postmenopausal women.

NO. 31

HEPATITIS C VIRUS AND COGNITIVE IMPAIRMENT: A LONGITUDINAL STUDY

Lead Author: Pedro M. Sánchez-Gómez, M.D.
Co-Author(s): Edorta Elizagárate, M.D., Acebo García, Ph.D., Javier Pena, Ph.D., Natalia Ojeda, Ph.D., Nuria Grivé, María Ã□ngeles Ruiz de AsÃºa, Joseba Portu, M.D., Jesus Ezcurra, M.D., M. Karim Haidar, M.D., Miguel Gutiérrez, M.D.

SUMMARY:

Background: Hepatitis C virus (HCV) is a common blood-borne complex illness that affects 2% of worldÂ´s population. Cognitive impairment has been proven to be present, and it affects performance in several cognitive domains. Some previous studies interpreted this decline as a consequence of cirrhosis-associated hepatic encephalopathy, but recent data shows that at least 1/3 of patients experience these difficulties in the absence of cirrhosis, liver dysfunction, viral load or genotype. Still, the potential role of antiviral therapy and pharmacological treatments remains unclear. **Methods:** At this ongoing multisite longitudinal study, we recruited 26 patients with HCV (HCV treatment naïve) and 12 healthy controls. As part of the baseline assessment, all subjects underwent a physical and psychiatric evaluation to control for related or unrelated health problems, HIV, potential drug use, fatigue and affective symptoms. In addition, a neuropsychological examination was administered with eleven measures to cover the cognitive domains of premorbid IQ estimation, processing speed, attention, working memory, language, verbal and visual learning and memory, and executive functioning. **Results:** Patients' performance was significantly lower than the healthy comparison in several cognitive domains,

including visuospatial learning and memory, verbal learning and memory, and executive functioning (p <0,05). However, after controlling for education and affective symptoms, no significant differences were found in basic cognitive domains such as speed of processing, attention, working memory and language. **Conclusion:** The present study suggests that HCV infection has, in fact, a relevant impact on cognitive performance, in particular in higher-level cognitive processes. For most basic cognitive domains, the initial differences in performance can be explained by the influence of other illness-related variables.

NO. 32

THE TORONTO BARIATRIC INTERPROFESSIONAL PSYCHOSOCIAL ASSESSMENT SUITABILITY SCALE (BIPASS™): A DELPHI STUDY TO INFORM ASSESSMENT TOOL DEVELOPMENT

Poster Presenter:Gurneet S. Thiara, M.D.
Lead Author: Vincent A. Santiago, B.Sc.
Co-Author(s): Richard Yanofsky, Sayed Abdul-Kader, Gurneet Thiara, Susan Wnuk, Lorraine Gougeon, Marlene Taube-Schiff, Raed Hawa, Sanjeev Sockalingam

SUMMARY:

Background: Psychiatric comorbidity is prevalent in bariatric surgery candidates, but currently, there are no standardized assessment tools to stratify patient risk for surgery based on psychosocial factors. With an aim to increase standardized and consistent decisions regarding patients undergoing surgery, we developed the Toronto Bariatric Interprofessional Psychosocial Assessment Suitability Scale (BIPASS™). The purpose of this study was to develop the items of the BIPASS tool based on literature review and expert consensus using a Delphi process. **Methods:** A comprehensive literature review was used to identify psychosocial risk factors influencing bariatric surgery outcomes, such as preoperative weight and quality of life. This review yielded 26 factors, which were then included in a first-round Delphi survey administered to 25 interprofessional bariatric surgery experts from five countries. These included psychiatrists (N=8), psychologists (N=5), social workers (N=3), dietitians (N=2), nurses (N=3), and other M.D.s (N=2). Respondents were asked to rate items from most to least significant predictor of bariatric surgery outcomes. A second-round Delphi survey was then used to further identify the most significant predictors. Items were included in the second Delphi if they exceeded the average weighted rank cutoff score of 10.50. Scoring criteria for each item were established using feedback from multidisciplinary team members. **Results:** Initially, 21 items scored above the cut point of 10.50. Thus, the bottom five items were removed and the second round survey was used to weigh items based on significance. After further retrospective review of bariatric surgery psychosocial assessments, the final scale was consolidated to consist of 14 items, comprising four domains: Patient's Readiness Level, Social Support System, Psychiatric Illness and General Assessment Features, such as truthfulness and expectations. Four exclusion criteria were also included from the survey items and identified based on current standards of exclusion for bariatric surgery. **Conclusion:** Our results demonstrated the content validity of the Toronto BIPASS™ tool given the thorough multidisciplinary approach of the Delphi method in identifying psychosocial factors related to bariatric surgery outcomes. Further tests of validity and reliability have been carried out, and a cutoff score has now been established. Our hope is for this tool to be used by bariatric teams in order to identify and stratify patient risks, as well as guide interprofessional discussions regarding bariatric surgery candidacy.

NO. 33

STATUS POST-CARDIAC ARREST AND NON-ST-ELEVATION MYOCARDIAL INFARCTION SECONDARY TO COCAINE ABUSE: A CASE REPORT

Lead Author: Ulfat Shahzadi, M.D., M.B.B.S.
Co-Author(s): Sagy Grinberg, M.S. III, Saad Ferdous, M.D., Parveen Gill, M.D., Asghar Hossain, M.D., F.D.A.P.A.

SUMMARY:

Cocaine is still a very popular drug that is used illicitly despite its well-known and established adverse cardiac effects. The incidence of myocardial infarction in cocaine-associated chest pain is approximately 6%. Cocaine exposure was defined as self-reported cocaine use within the last 72 hours or a positive urine test for cocaine. Cocaine-induced infarction is highly prevalent in patients aged 18 to 45 years of age who may not have any preexisting coronary artery disease. The most common cocaine-induced electrocardiogram changes are nonspecific ST segment changes, ST segment elevation, T wave inversion and QT interval prolongation. Cocaine-induced non-ST-elevation myocardial infarction is an uncommon electrocardiographic presentation and seen in this case report. A 26-year-old Hispanic male

with a history of cocaine abuse for unspecified duration who has never been hospitalized in a psychiatric facility and is not on any medication was in party at home when his family heard a sound and found him unconscious. The patient wasn't breathing at that time, and CPR was started by the family. An ambulance wasn't called, and in the emergency room, the patient was found to be in ventricular fibrillation, resuscitated and shocked two times, ROSC, and admitted to ICU with diagnosis of cardiac arrest secondary to cocaine abuse. Cardiology, neurology, pulmonary and gastroenterology services were consulted. Patient remained unresponsive for 48 hours on all lifesaving protocols. Then sudden limb movements were appreciated. EKG showed non-ST-elevation MI and finally recovered completely after a lengthy stay in the hospital with no residual effects. This patient doesn't have any significant medical or psychiatric history. He was using cocaine since 18 years old and using daily. Echocardiography showed EF 35–40%. Cardiac catheterization was normal. Cocaine intoxication is the most frequent cause of drug-related death reported by medical examiners in the U.S., and these events are most often related to the cardiovascular manifestations of the drug. This case report highlights cocaine's toxicity and adverse effects on one's life. Once playing a vital role in medicine as a local anesthetic, decades of research have established that cocaine has the ability to cause irreversible structural damage to the heart, greatly accelerate cardiovascular disease, and initiate sudden cardiac death and cardiac arrest secondary to severe vasoconstriction.

NO. 34

CHRONIC PAIN AS A POTENTIAL RISK FACTOR OF SUICIDE: A CASE REPORT

Lead Author: Ulfat Shahzadi, M.D., M.B.B.S.
Co-Author(s): Fatima Iqbal, M.D., Laima Spokas, M.D., Asghar Hossain, M.D.

SUMMARY:

Background: Chronic pain has long been considered an important risk factor for suicidal behavior. Chronic pain disorders can exert major negative effects on virtually every aspect of an individual's life. It has been hypothesized that chronic pain over time increases an individual's acquired capacity to engage in suicidal behaviors in the presence of stressors and/or suicidal thoughts. It is not surprising that patients with chronic pain are more likely to have impairments in social and occupational functioning that could lead to a point of emotional fragility where they experience suicidal thoughts and behaviors. Suicidal behavior encompasses a spectrum of experience that includes passive suicidal ideation, active suicidal intent and suicide completion. **Objective:** The purpose of this case report is to document the importance of early diagnosis and treatment of suicide risk in patients suffering from chronic pain in order to decrease morbidity and mortality, even in the absence of mental health problems. **Case:** We report a case of a 50-year-old Caucasian male with no past psychiatric history and good social support who was not on any medication and attempted suicide by stabbing himself in the abdomen due to chronic pain. The patient was in good health until three years ago when he was involved in a fatal car accident with life threatening injuries that required multiple surgeries, but was still suffering from extreme pain and was being followed up in the pain clinic. **Conclusion:** Hence, we conclude that health care providers treating patients with chronic pain should be cognizant of the increased risk of suicidal ideation observed in these patients and that this risk appears to be due, at least in part, to other well-known correlates of pain such as depression and substance use disorders. Moreover, It may be useful to conduct a more careful and thorough diagnostic suicide risk assessment in patients suffering from chronic pain and be aware of the warning signs such as increased hopelessness, sleep disruption, and decreased emotional and physical stability. However, limited attention is given to the extent to which suicide is associated with chronic pain in the absence of other risk factors, and further studies need to be conducted in order to gain a better understanding of this well-documented association.

NO. 35

CASE REPORT: PSYCHIATRIC ADVERSE EFFECTS OF TIZANIDINE

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

SUMMARY:

Background: Tizanidine is a centrally acting α2-adrenergic agonist, indicated for the management of spasticity. The authors describe a case of manic switch in patients with major depression disorder likely induced by tizanidine. **Case:** A female patient in her 30s with a diagnosis of major depression disorder stabilized on duloxetine 60mg daily presented with one week history of irritability, labile

mood, poor sleep, difficulty concentrating and passive death wishes. Less than one week ago, she was started on tizanidine 2mg twice daily by her primary care physician for muscle spasms. Her mother also confirmed her change in mental status after addition of tizanidine. She agreed with a plan of discontinuation of tizanidine during her inpatient hospitalization, which resulted in mild improvement in aggressive behavior and irritability, but had persistence of poor sleep, poor concentration and labile mood. The addition of lamotrigine to duloxetine resulted in gradual improvement in mood symptoms. **Conclusion:** On the basis of this case, the authors conclude that patient and family members should be educated about potential psychiatric side effects of tizanidine. Tizanidine should be used cautiously in patients with a history of bipolar disorder. We found no case report of tizanidine-induced manic/hypomanic switch in the literature.

NO. 36

ACETYLCHOLINESTERASE INHIBITORS FOR DELIRIUM IN OLDER ADULTS

Lead Author: Rajesh R. Tampi, M.D., M.S.
Co-Author(s): Deena J. Tampi, M.B.A.-H.C.A., M.S.N., R.N., Ambreen K. Ghori, M.D.

SUMMARY:

Objective: The aim of this systematic review is to identify published randomized controlled trials (RCTs) that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥60 years). **Methods:** A literature search was conducted of PubMed, MEDLINE, EMBASE, PsycINFO and Cochrane Collaboration databases for RCTs in any language that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥60 years). Also, bibliographic databases of published articles were searched for additional studies. **Results:** A total of seven RCTs that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥60 years) were identified. In five of the seven studies, there was no benefit for the acetylcholinesterase inhibitor in either the prevention or management of delirium. In one study, there was a trend toward benefit for the active drug group on the incidence of delirium and the length of hospital stay, but both outcomes did not attain statistical significance. One study found a longer duration of delirium and a longer length of hospital stay in the active drug group when compared to the placebo group. The acetylcholinesterase inhibitors were well-tolerated in four of the seven studies. In one study, the mortality rate was found to be almost three times higher in the group receiving haloperidol and rivastigmine when compared to the group receiving haloperidol and placebo. **Conclusion:** Current evidence does not suggest efficacy for acetylcholinesterase inhibitors for the prevention or management of delirium in older adults.

NO. 37

ARE STIMULANTS BENEFICIAL IN INDIVIDUALS WITH TRAUMATIC BRAIN INJURY?

Lead Author: Rajesh R. Tampi, M.D., M.S.
Co-Author(s): Michael B. Maksimowski, M.D., M.A.

SUMMARY:

Objective: The objective of this systematic review is to summarize data from published randomized controlled trials (RCTs) on the use of stimulants in individuals with traumatic brain injury (TBI). **Methods:** A literature search was conducted of five major databases (PubMed, MEDLINE, PsychINFO, EMBASE and Cochrane Collaboration) that identified RCTs on the use of stimulants for human patients with a diagnosis of TBI. **Results:** A total of 176 articles were identified, of which 16 matched the inclusion criteria and were reviewed in entirety. The majority (15) of studies assessed methylphenidate (MPH); one assessed dexamphetamine and MPH, and one assessed modafanil. Seven studies showed significant improvements in reaction time while four studies showed significant improvements in accuracy in the stimulant group when compared to the placebo group. Of the two studies that included follow-up, only one found significant differences in disability ratings, attention-concentration and motor memory at 30 days but not 90 days between the stimulant and the placebo groups. A majority of studies demonstrated significant treatment effects immediately (i.e., within minutes to hours) after first-time administration of the tested stimulant. Four of the sixteen studies (two adult, two pediatric) did not find benefit for stimulants when compared to placebo. Two studies found no significant differences in self-reported side effects, but one of the two studies showed a significant difference in mean arterial pressure. **Conclusion:** There is evidence to suggest that in individuals with TBI, stimulants can improve attention immediately and for short time periods.

NO. 38

SUBSTANCE ABUSE IN CONSULTATION-LIAISON PSYCHIATRY UNIT

Lead Author: Cristina Uzal Fernandez, M.D.
Co-Author(s): Jesus Gomez-Trigo Baldominos, M.D., Luis Docasar Bertolo, M.D., Ignacio Gomez-Reino Rodriguez, M.D., Estefania Pumar Cordero, M.D., Isabel Maria Garcia Lado, M.D., David Simon Lorda, M.D.

SUMMARY:

Background: Substance abuse produces direct and indirect medical complications, which often need hospitalization, and it involves a major problem in the consultation-liaison psychiatry unit. A study reports 25% of patients hospitalized for injuries were intoxicated at the time of trauma and estimated that the prevalence of alcohol-related problems in general hospitals is between 12.5% and 30%. **Objective:** Determine the prevalence of substance abuse and dual pathology in the consultation-liaison psychiatry unit. **Methods:** â€¢ Reviewed the medical records of 597 consultations received by the consultation and liaison psychiatry unit from January 1, 2014 to December 31, 2014, from medical and surgical services â€¢ Recorded data: demand, admission date, date of application for the consultation, date of replying, date of patient discharge, consultation reason, applicant service, clinical diagnosis, number of visits, prescribed treatment and referral after discharge â€¢ Once data was collected, selected patients whose diagnosis and/or consultation reason had been abuse of substances and/or alcohol drinking, as well as those referred to the addictions unit after discharge. **Results:** 9% of consultations corresponded to patients diagnosed with alcoholism and other addictions. The most common assistance reason was revision of treatment and medical history. The service that requested more consultations was internal medicine (35%), followed by digestive and general surgery (13.2% in both cases). The most commonly diagnosed psychiatric comorbidities were psychotic disorder and adjustment disorder. 56% of patients were remitted to the addictions unit, and 7.6% required transfer to the psychiatric hospitalization unit. **Conclusion:** Failure to diagnose problems related to alcohol and/or other substances of abuse in hospitalized patients is too costly in terms of morbidity and expense. The data from this study show the need for a program of screening or early detection of abuse of alcohol and other drugs in hospitalized patients in our area, as we detected fewer cases than there would be in accordance with several studies.

NO. 39

INTRODUCING EGURU

Lead Author: Shuo Xiang, M.D.
Co-Author(s): Megan Yang, M.D., Tariq Munshi, M.D., M.R.C.Psych., Farooq Naeem, M.D., M.R.C.Psych.

SUMMARY:

Objective: This presentation will describe the process of developing a CBT-based app, eGuru, to tackle common emotional problems. **Methods:** This project involves the development of app components including a graphic function that allows users to record their thoughts, emotions and behaviors. Stakeholder consultation was used to inform development. The app was based on a self-help CBT manual written by the authors that has been field tested. Development of the app makes use of the latest state-of-the-art technologies, including PHP, MariaDB, MySQL, AJAX framework, Java, Swift and Xcode, compatible with the Android and iOS platforms to maximize the reach to a global audience. Virtualization and strong encryption technologies, including VPS, VMware, TrueCrypt (AES, Rijndael, Twofish, Serpent, SHA-512, XTS) and SSL, are used to maximize user data safety and confidentiality. **Results:** The eGuru took one year to build. It involves several disciplines, including public health, psychiatry, information technology and software engineering. The project was led by a psychiatrist who is also a CBT therapist and is co-supervised by a trainee psychiatrist with an additional bachelor's degree in software engineering and a master's degree in bioinformatics. We are currently in the process of evaluating different components of eGuru. **Conclusion:** It's feasible to build an app with the help of a group of professionals. However, this needs to be clinically evaluated to test its effectiveness.

NO. 40

INTRAVENOUS MIDAZOLAM-DROPERIDOL (COMBINATION), DROPERIDOL OR OLANZAPINE FOR METHAMPHETAMINE-RELATED AGITATION IN THE EMERGENCY DEPARTMENT

Lead Author: Yen Ling Yap, M.Sc.
Co-Author(s): Taylor D.McD., M.D., Knott J.C., Ph.D., Taylor S.E., Pharm.D., Phillips G.A., M.B.B.S., Karro J., M.B.B.S., Chan E.W., Ph.D., Kong D.C.M., Ph.D., Castle D.J., M.D.

SUMMARY:

Background: The growing prevalence of methamphetamine use in society has increased the frequency of emergency department (ED) staff providing care for patients who are violent as a result of the acute effects of methamphetamines. This study explored the effectiveness and safety of three commonly used drug sedation regimens for a group of methamphetamine-affected patients who were part of a larger trial that examined acute agitation in the ED. **Methods:** Patients, aged 18–65 years, requiring intravenous (IV) drug sedation for acute agitation were enrolled in two metropolitan EDs in Victoria, Australia (October 2014–August 2015). A total of 349 acutely agitated patients, including 92 (26.4%) patients with methamphetamine-related agitation, were enrolled and randomly assigned to IV bolus of midazolam (5mg)-droperidol (5mg) combination, droperidol (10mg) only or olanzapine (10mg) only groups. Two top up doses were administered, if required: midazolam (5mg), droperidol (5mg) or olanzapine (5mg), respectively. Primary outcome was time to adequate sedation. **Results:** Baseline characteristics of those with methamphetamine-related agitation in the three groups (age, gender, triage category, alcohol intoxication) did not differ ($p>0.05$). However, the median (IQR) times to adequate sedation (minutes) differed significantly ($p<0.001$): midazolam/droperidol group 5 (8), droperidol 11.5 (16), olanzapine 10.5 (12). Five minutes after the initial sedative administration, 55.9%, 16.7% and 25.0% of patients were adequately sedated, respectively, ($p<0.01$). At 10 and 15 minutes, significantly more patients in the midazolam/droperidol group were adequately sedated ($p<0.05$). Significantly fewer patients in the midazolam/droperidol group required top-up doses (23.5%, 66.7% and 67.9%, respectively, $p<0.01$) or rescue medication (2.9%, 13.3% and 28.6%, respectively, $p<0.05$). The proportion of patients in each group who experienced an adverse event did not differ (20.6%, 6.7% and 17.9%, respectively, $p=0.27$). **Conclusion:** The midazolam/droperidol combination is the most effective drug regimen for sedation of methamphetamine-related agitation. However, this exploratory analysis is not powered to identify the real differences in adverse event profiles. A larger study is warranted to determine the safety profile of the midazolam/droperidol combination in methamphetamine-affected patients.

YOUNG INVESTIGATORS' NEW RESEARCH 1

MAY 16, 2016

NO. 1

MENTAL HEALTH DURING RESIDENCY AND FELLOWSHIP TRAINING: ASSESSING THE BARRIERS TO SEEKING CARE

Lead Author: Alexandra L. Aaronson, M.D.
Co-Author(s): Katherine Backes, M.D., Gaurava Agarwal, M.D., Joshua L. Goldstein, M.D., Joan Anzia, M.D.

SUMMARY:

Background: Research has shown that compared to the general population, resident and fellow physicians are at elevated risk of developing depression; however, they are less likely to utilize mental health services. At present, little is known about why this discrepancy exists. We sought to identify the barriers to seeking mental health treatment among residents and fellows across all specialties at an academic medical center in Chicago. **Objective:** Explore residents' and fellows' thoughts on their need for mental health care during training and attempt to identify any potential barriers. **Methods:** Residents and fellows from all specialty programs were invited via email to complete an anonymous self-report questionnaire consisting of 10 questions. Demographics and desire to obtain psychiatric care were assessed via multiple-choice questions; perceived barriers to care were assessed on a 5-point Likert scale. All results were de-identified. **Results:** Of the 18% (181 of 1,100) of residents and fellows who completed the survey, 65% (118 of 181) were female. Respondents were from the following programs: surgical specialties (24%), internal medicine (20%), emergency medicine (12%), OB-GYN (12%), psychiatry (11%), anesthesiology (6%), neurology (6%), pediatrics (4%) and less than 2% from family medicine, dermatology, physical medicine and rehabilitation, radiology, pathology, and radiation oncology. While the majority of respondents (61%) felt they would have benefited from psychiatric services, only 24% of these individuals actually sought treatment. Of the respondents who did not seek treatment, the most commonly reported barriers to seeking care were lack of time (90%), concerns about confidentiality (67%), concerns about what others would think (58%), cost (56%) and concern for their ability to obtain permanent licensure (50%). **Conclusion:**

Despite feeling that they have required mental health services, few trainees have actually sought care due to time constraints, lack of money and concerns for confidentiality. This study identifies an overall need for improved access to mental health providers and support for medical house staff, as well as further psychoeducation for house staff on the risks of developing depression and how to seek care.

NO. 2

ASSOCIATION OF PLATELET HYPERAGGREGABILITY WITH DEMENTIA: A REPORT OF A COLOMBIAN KINDRED

Lead Author: Juliana Acosta-Uribe
Co-Author(s): Andrés Naranjo, Ph.D., M.S., Miguel Ã□ngel Valencia, Sonia Moreno, M.S., Fredy Vásquez, Ph.D., Julieta Botero, M.D., Luis Ignacio Tobón, M.D., Sebastián Ruiz, M.D., Carolina RÃºa, M.S., Gabriel Bedoya, M.S., Margarita Giraldo, M.D., Francisco Lopera, M.D.

SUMMARY:

Background: The "sticky platelet syndrome" (SPS) was described by Holliday in 1983 as the symptomatic form of platelet hyper aggregability. SPS usually manifests as arterial or venous thrombosis, strokes, migraine, or recurrent miscarriages. In 1986, Mammen described the platelet aggregation patterns in response to epinephrine and adenosine diphosphate (ADP) and proposed the diagnosis criteria for SPS. Different studies suggest SPS has an autosomal dominant inheritance pattern, but the implicated genes haven't been described yet. In our memory clinic, we identified a family with a previous diagnosis of late-onset familial Alzheimer's disease; it was a large family from Don Matias, Antioquia, with over 400 individuals spanning four generations. Of the five living members of the first generation, three were affected by late-onset dementia. As we inquired further into their medical history, we discovered multiple relatives with recurrent deep vein thrombosis, miscarriages, strokes at a young age and migraine. One patient from the third generation had been studied for thrombophilia and was diagnosed with SPS; we suspect that other family members may be affected with SPS as well. **Objective:** Identify an association between SPS and dementia. **Methods:** The five living siblings of the first generation of the family received a medical, neurological examination and neuropsychological evaluation. Platelet aggregometry with epinephrine and ADP, according to Mammen's protocol, was also performed in all five patients. Brain MRIs were performed in four of them (including the three individuals with dementia). They were also screened for Notch3 mutations for CADASIL. Results: We found platelet hyperaggregability in all five siblings. Three of them, all women, had a history of stroke, migraine and recurring miscarriages and thus were diagnosed with SPS; these three individuals also presented with late-onset dementia that was originally classified as Alzheimer's disease. Brain MRI revealed subcortical hyperintensities characteristic of multi-infarct disease as well as a decrease of the hippocampi volume, hence suggesting a mixed dementia. The other two siblings had no history of symptoms related to SPS, nor cognitive decline, and were classified as asymptomatic platelet hyper aggregability; one of these patients also had a brain MRI preformed, which revealed no signs of vascular disease or hippocampal atrophy. Notch3 mutations for CADASIL were negative in all five patients. **Conclusion:** In this Colombian family, patients with SPS presented cognitive decline associated with the presence of subcortical hyperintensities on brain MRI, suggestive of multi-infarct disease. We propose SPS as a novel risk factor for the development of dementia; however, larger studies are needed to confirm this association.

NO. 3

WHAT'S MAKING ME FEEL SO QUEASY? A CASE OF CANNABIS HYPEREMESIS SYNDROME EXACERBATED BY CONCURRENT USE OF FLUOXETINE

Lead Author: Adefolake Akinsanya, M.D.
Co-Author(s): Katy LaLone, M.D.

SUMMARY:

Background: THC has been commonly used for its medicinal effects as both an antiemetic and an appetite stimulant. Paradoxically, prolonged heavy use of THC has been linked to the development of cannabinoid hyperemesis syndrome (CHS). While the exact mechanism by which chronic use of THC can affect the central nervous system (CNS) and the gastrointestinal (GI) tract remains mostly hypothetical, there is some evidence that THC can directly affect serotonin receptors. Furthermore, given that serotonergic antidepressants commonly cause symptoms of nausea, we sought to further understand this potential interaction between cannabis and serotonergic medications to help guide our treatment of depression. **Methods:** We present

a patient with concurrent CHS and major depressive disorder who experienced worsening of CHS symptoms with use of fluoxetine, then improvement following transition to bupropion. We reviewed the current literature to better understand the mechanism by which cannabis affects the CNS, specifically its interaction with serotonin receptors. **Results:** While first described by Allen et al. in 2004, Simonetto et al. (2012) reported the largest case series to date of 98 patients with proposed clinical criteria for CHS that included long-term use of THC, severe cyclical nausea and vomiting, resolution with THC use cessation, and relief of symptoms with hot showers or baths. Several authors have hypothesized that given its highly lipophilic properties, long half-life, cumulative levels of THC in the CNS acting via CB1 receptors (centrally) and inhibition of 5HT3 receptions could cause delayed gastric emptying and disruption of the hypothalamic equilibrium, thereby affecting thermoregulation. There is some limited evidence that use of serotonergic agents like fluoxetine could even worsen symptoms of CHS3. **Conclusion:** The suspected detrimental GI effect of long-term use of THC is impaired mobility, and we conclude that the findings of severe achalasia in this patient with suspected CHS could have been attributed in part to chronic THC use. The patient's nausea improved with transition to a non-serotonergic antidepressant, which is consistent with previously reported findings of fluoxetine potentially worsening CHS. Given the high prevalence of mood and anxiety disorders in the general population and ongoing legalization of cannabis nationally, the use of psychotropic agents concurrently with THC certainly demands further research to help clarify best practices for psychiatrists.

NO. 4

A CASE OF ORTHOSTATIC TREMOR DURING RISPERIDONE TREATMENT

Lead Author: Seung-Min An, M.D.
Co-Author(s): MinHa Hong, Sang-Min Lee, Kyung Kyu Lee, Jong-Woo Paik

SUMMARY:

Orthostatic tremor is a rare disease, and there has been no case reported on the incidence while taking antipsychotic drugs. Since orthostatic tremor shows a symptomatic profile different from the well-known tremor generally, clinicians frequently overlook or misdiagnose patients with orthostatic tremor. In this poster, the authors report on a case of orthostatic tremor occurred while using risperidone in a patient with diagnoses of schizophrenia and intellectual disability. When the patient maintained the standing posture for more than two minutes, she complained of postural instability and feeling like she was falling, and she sat down. The tremor disappeared completely when she took sitting position. The tremor was not found from parts of the body other than the legs. She was under observation at drug-free status for a total of eight days in order to rule out antipsychotic-induced movement disorder. Also, the treatment known to improve the adverse effects of antipsychotics like an anticholinergic drug, benzodiazepine or beta blocker was ineffective for tremor. The possibility of antipsychotic-induced movement disorder was ruled out. The case had been improved by administration of clonazepam and gabapentin. In conclusion, when there is incidence of tremor in patients taking psychiatric drugs, the adverse effects of the drugs should be considered in addition to the evaluation of other possible causes by a precise neurological examination. It is important to make an exact diagnosis of orthostatic tremor early and take effective treatment such as clonazepam.

NO. 5

MENTAL HEALTH SCREENING FOR THE BABY BOOMER GENERATION IN SOUTH KOREA: THE RESULTS OF A DEMONSTRATION PROJECT

Lead Author: Seung-Min An, M.D.
Co-Author(s): Mikyung Lee, So-Hee Lee, Jeong-Ho Seok, Kyung Kyu Lee, Jong-Woo Paik

SUMMARY:

Background: As the baby boomer generation, Koreans in their 50s experience various mental health risks, such as high rates of depression and suicide, due to changes in socioeconomic status and family structure, among other reasons. Therefore, the development of a mental health screening for the 50s is necessary. Because of underlying prejudice against psychiatry in Korea, screening that relies on a self-report questionnaire has not been effective enough for early detection and treatment. This study conducted high-quality mental health screening through psychiatrist interviews along with self-report questionnaires as a demonstration project with the support of the Seoul government. **Methods:** Subjects were volunteers in their 50s, excluding those currently under psychiatric care. Screening was performed by a psychiatrist in seven primary clinics. Evaluation was based on psychiatrist

interviews and at least two self-report questionnaires, including the Patient Health Questionnaire (PHQ) and Beck Depression Inventory (BDI). Normal subjects completed the screening only supplying mental health information, and subjects deemed to require psychiatric care was advised continuous treatment. Costs were supported by the Seoul government. **Results:** Thirty-two subjects (mean age=54.50, 9 male, 23 female) participated. The most common symptoms were depression (n=16), anxiety (n=16) and insomnia (n=16), and suicidal ideation was reported in two subjects. Twenty-five subjects met *DSM-5* diagnostic criteria. Depressive disorder was the most common diagnosis (n=17). Seven subjects were determined to be normal and 21 subjects in need of treatment. After the screening, 20 subjects continued medicine treatment and psychiatrist visits. **Conclusion:** Appropriate diagnosis and treatment were conducted in 62.5% of the subjects through this study, who responded with high rates of continued treatment and satisfaction. These results can be attributed to the unprecedented method of screening through psychiatrist interview. This study will serve as the basis for future mental health screenings for baby boomers by psychiatrists and set a new direction for mental health policies in Seoul.

NO. 6

MECLOFENAMIC ACID-REDUCED PLASMA CRP AND IMPROVED SCORES ON THE NIH TOOLBOX COGNITIVE TEST BATTERY IN A PATIENT WITH SCHIZOAFFECTIVE DISORDER

Lead Author: Taiwo Babatope, M.D., M.B.A., M.P.H.
Co-Author(s): Ruchir Patel, Ramandeep S. Kahlon, Satyajit Mohite, Titilayo Makanjuola, Sumana Goddu, Osarhiemen Aimienwanu, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:

Background: Peripheral and central Inflammatory markers are elevated in schizophrenia spectrum disorders. These markers have also been associated with poorer cognitive function. Previous research has shown that lowering inflammation in the central nervous system (CNS) could improve the severity of symptoms in psychotic disorders. However, the effect of specifically lowering peripheral inflammation and its impact on cognition has not been studied. This study involved the administration of meclofenamic acid (a nonsteroidal anti-inflammatory drug with poor penetration into the CNS) in a patient with schizoaffective disorder. **Methods:** After IRB approval, meclofenamic acid (MA) 150mg (add-on to antipsychotics) was administered daily for two weeks in a 19-year-old male patient with schizoaffective disorder diagnosed with the Structured Clinical Interview for the *DSM-5*. Cognitive function was measured at baseline and at two weeks with the NIH Toolbox cognitive battery. Plasma level of C-reactive protein (CRP) was measured at baseline and after two weeks' treatment with MA. **Results:** MA led to a reduction in plasma CRP (87.8pg/ml at baseline vs. 79.3pg/ml at two weeks). The reduction in CRP was associated with improved performance on the Fluid Composite Score, Picture Vocabulary, Flanker Inhibitory Control, Pattern Comparison Process Speed, Picture Sequence Memory and Oral Reading Recognition Tests. **Conclusion:** This experiment supports the feasibility of administering MA in patients with schizophrenia spectrum disorders and may be a useful adjunctive medication for improving cognition. Randomized control trials are indicated to further evaluate the effect of MA on cognition in patients with schizophrenia spectrum disorders.
Keywords: Schizophrenia, Meclofenamic Acid, Neuroinflammation, Cognition

NO. 7

DEVELOPING A QUALITY DASHBOARD FOR CONSULTATION-LIAISON PSYCHIATRY SERVICES IN CANADA: A PILOT OF TWO QUALITY INDICATORS

Lead Author: Janooshsheya Balasundaram, M.D.
Co-Author(s): Carrol Zhou, Rima Styra, Adrienne Tan, Raed Hawa, Susan Abbey, Sanjeev Sockalingam

SUMMARY:

Background: Rates of psychiatric illness in inpatient medically ill patients approximate 40% and have been as high as 80% in some studies, depending on definitions of psychiatric illness and populations. With increasing accountability and alignment with the triple aim for quality care, inpatient consultation-liaison psychiatry (CLP) services are also being asked to report quality indicators on outcomes relevant to complex medically ill patients with comorbid psychiatric illness. The rate of newly diagnosed psychiatric illness by the CLP service has been previously identified as a potential quality indicator for CLP services. Although we have reported Canadian CLP quality indicators over a 10-month period, we are now reporting these measures over a 21-month timeline. **Methods:** 1,626 patients referred to the CLP services at two hospitals in the

University Health Network in Toronto, Canada, between January 1, 2014, and October 31, 2015, were included in this sample. Data collecting included patient demographics, referring services and primary psychiatric diagnosis at time of consultation. Based on a review of the literature and discussion with quality committee members in the hospital, the following quality indicators were selected and examined: new psychiatric diagnosis made by the CLP service (excluding delirium and adjustment disorder) and percentage of patients seen by the C-L service within 24 hours. Data were analyzed using descriptive data. Also these two parameters are compared between the years 2014 and 2015. **Results:** Among all referred patients, 53.3% were male, and the mean age was 58.5. The highest referring services were general internal medicine (40%), intensive care units (14%) and transplant (12.7%) services. The most common reasons for referral were for assessment of mood (38.8%), confusion (19.5%) and anxiety (14.7%). The primary diagnoses made at the time of consultation were delirium (19.5%), major depression (16%) and anxiety disorders (9.3%). In 2014, 15.5% of patients the CLP service made a new psychiatric diagnosis based on collateral history, patient report and review of the patient's medical chart—15.1% in 2015. In 2014, most consults were seen within one day (96.7%), with 1.6% seen within two days and 1.6% seen in three or more days, and in 2015, the percentages were 97.7%, 1.5 % and 0.6%, respectively. **Conclusion:** Based on these data from two Canadian general hospitals, the CLP service diagnosed new psychiatric disorders over 15% of the time and saw more than 96% of consults within 24 hours. The latter is higher than previously reported studies, including data from a previous United Kingdom study. Moreover, the most common referring services were general internal medicine and critical care. Future studies should compare referral patterns, time for consults to be seen and new psychiatric diagnoses by other CLP services in Canadian settings to determine national quality benchmarks for CLP services.

NO. 8

VORTIOXETINE-INDUCED DISTAL INTERPHALANGEAL JOINT INFLAMMATION OF THE GREAT TOE

Lead Author: Priya Batta
Co-Author(s): Alan R. Hirsch

SUMMARY:

Background: Vortioxetine is a serotonin specific reuptake inhibitor that has been reported to cause musculoskeletal side effects. Monoarticular pain has not thus far been described. We present such a case. **Case:** A 49-year-old female with a past history of multiple hospitalizations for chronic severe migraine presented with complaints of depression and stress. She has had depression for 20 years, which has been constant and worsened in the past five years. She endorsed sadness, crying spells, fatigue, demotivation, lack of interest, poor concentration, irritability, anger, guilt, hopelessness, helplessness, anorexia, insomnia, absent libido and racing thoughts. In discussing her anxiety, she affirms that her normal state is that of nervousness and agitation, from which she has suffered all her life. She freely admits being a worrier and suffers from panic attacks manifested by dyspnea, diaphoresis and tachycardia. **Results:** Abnormalities in her mental status examination included the following: oriented times 2; disheveled; defensive; motor retardation; mood: depressed, anxious and irritable with blunted affect; memory testing: immediate recall: six digits forward and four digits backward; remote memory: president: Obama? ancillary testing: Clock Drawing Test: 4 (abnormal); Animal Fluency Test: 20 (normal); Beck Depression Inventory II: 23 (moderate depression); Beck Anxiety Inventory: 25 (moderate anxiety). Within two days of starting 5mg of vortioxetine, she developed pain and swelling of the distal interphalangeal joint of the left great toe and an antalgic gait. After five days, the medication was discontinued. Within two days, there was full resolution of the swelling and pain, and ambulation returned to normal. **Discussion:** The mechanism whereby vortioxetine induced this monoarticular pain is unclear. Underlying depression alone can precipitate arthritic exacerbation. In the depressed state, there may be a greater perception of somatic pain, which allowed her to appreciate any arthritic pain that may have pre-existed the use of vortioxetine. As such, this may have represented a correspondence bias. Furthermore, mild new pain is perceived as more intense in those who are depressed. Thus, any minimal arthritic injury may be viewed as more intense. These were unlikely given the long duration of her depression as well as the timing of vortioxetine and resolution shortly after the medication was discontinued. Vortioxetine may have paradoxically exacerbated anxiety, and anxiety can precipitate pain. Misattribution may not be due to a preexisting condition, but rather due to a new condition such as unrecognized mild trauma, in

which the blame was inaccurately placed on vortioxetine. Search and query as to monoarticular involvement in those taking vortioxetine is warranted.

NO. 9

PSYCHIATRIC EMERGENCY WORKFLOW: A RESIDENT-DRIVEN QUALITY IMPROVEMENT PROJECT

Lead Author: Thomas Blair, M.D., M.S.
Co-Author(s): Zev Wiener, M.D., Ariel Seroussi, M.D., Erick Cheung, M.D.

SUMMARY:

Background: Providing emergency psychiatric services is anecdotally regarded as a challenging component of psychiatric training. The roles of personal and structural factors in contributing to such difficulties have seldom, however, been studied systematically. This study investigates factors related to psychiatric emergency workflow and resident stress, with the goal of identifying specific and modifiable factors that affect quality of patient care and resident well-being. The setting is a psychiatric consultation service embedded in a medical emergency room at an academic medical center. **Methods:** This study has two phases: first, a survey of psychiatric residents, and second, a series of resident focus groups. In phase one, all psychiatric residents at UCLA Semel Institute for Neuroscience and Human Behavior (n=56) are invited to complete a survey pertaining to self-rated efficiency, workflow and stress in the emergency room. The survey includes approximately 40 specific, Likert-scaled items identified in piloting as potentially affecting workflow in a helpful or detrimental manner. Data analysis for this phase consists of descriptive, multivariate analysis to assess for correlation between such variables as, for instance, self-reported efficiency and electronic health record (EHR) use patterns. Following the survey, all residents are invited to participate in focus groups, which will emphasize personal aspects of workflow efficiency and stress. Interpretative phenomenological analysis, a qualitative method optimized for small, homogeneous groups in specific contexts (such as groups of 5–10 residents in a particular clinical setting), is the primary mode of analysis for this phase. **Results:** As a pilot study with exploratory and descriptive goals, this investigation does not include an intervention with treatment and control groups. However, we anticipate identification of specific, modifiable factors that impact quality of patient care and resident well-being. Examples include ease of communication with attending psychiatrists on call, use of the EHR, and application of the admission and discharge workflows. Presented results will include impact measures of specific, modifiable variables and plans for adapting our results to an intervention-based study with a comparison group. **Discussion:** Although many residents describe emergency room duty as stressful and many psychiatrists recall such duty as an exceptionally challenging aspect of residency, these observations are anecdotal. The goal of this study is to establish a basis for understanding specific, modifiable factors that impact quality of patient care and resident well-being in emergency psychiatric consultation and for designing and implementing a specific intervention program that accounts for these factors.

NO. 10

SYSTEMATIC REVIEW OF NALMEFENE IN ALCOHOL USE DISORDER

Lead Author: Meelie Bordoloi, M.D.
Co-Author(s): Vivek Agarwal, M.B.B.S., M.Med.Sc.

SUMMARY:

Background: Alcohol use is an enormous socioeconomic burden on any society. Annually, nearly 88,000 people (approximately 62,000 men and 26,000 women) die from alcohol-related causes, making it the third leading preventable cause of death in the United States. Currently, alcohol use disorder is being treated with only three medications in the United States: disulfiram, acamprosate and naltrexone. Nalmefene, a competitive opioid antagonist at mu and delta receptors with partial activity at kappa receptor, was approved for use in the EU in March 2013, Scotland in October 2013 and England in October 2014. **Objective:** Our aim is to study the literature and summarize available evidence with regard to the efficacy and tolerability of nalmefene in the treatment of alcohol use disorder. **Methods:** We carried out a literature search of medical databases Medline, CINAHL, Pubmed and EMBASE. We studied the abstracts of every study that was identified in the literature search. Eighteen studies fulfilled our inclusion criteria. The full text of the selected studies will undergo further critical appraisal and evaluation. **Results:** Through examination of the abstracts, we identified 18 studies, and our preliminary findings show that nalmefene was able to reduce the number of heavy drinking days (more than 60g/d in men and

more than 40 g/d in women) as well as total alcohol consumption. As-needed nalmefene (18mg of nalmefene just one to two hours before the anticipated time of drinking) was efficacious in reducing alcohol consumption in patients with high risk for alcohol-related harm. The common adverse effects were headache, nausea and vomiting, but they generally decreased after continuation of treatment. We are currently undertaking critical appraisal of the selected studies to test the robustness of these results. **Conclusion:** Nalmefene constitutes a new pharmacological treatment paradigm in terms of treatment goal (reduced drinking) and dosing regimen (as-needed) in alcohol dependent patients unable to reduce alcohol consumption on their own. It is being used in European countries with success, and it should be considered in the United States for the same.

NO. 11

SUBSTANCE USE DISORDER TRAINING IN CHILD AND ADOLESCENT PSYCHIATRY FELLOWSHIP: THE EFFECT ON FELLOWS' FUND OF KNOWLEDGE AND CONFIDENCE TO TREAT

Lead Author: Ali Canton, M.D.
Co-Author(s): Mariam Rahmani, M.D.

SUMMARY:

Background: Diagnosing and treating substance use disorders is essential when treating the child and adolescent population. Although exposure to this subset of psychiatry is common in clinical settings, a minority of child and adolescent psychiatry fellowship programs offer training dedicated to treating substance use disorders in children and adolescents. The implementation of a new substance use rotation would be expected to increase fellows' confidence and knowledge base in regard to addiction psychiatry in the adolescent population. **Methods:** In spring 2015, a three-month substance use rotation was created for fellows at the University of Florida Department of Child and Adolescent Psychiatry training program. This incorporates a half day per week in an outpatient child and adolescent psychiatric clinic with onsite supervision from a faculty trained in both child and adolescent psychiatry and addiction medicine. The fellows conduct new evaluations and provide medication management, individual therapy and family therapy for child and adolescent patients with substance use disorders. Fellows who participate in the rotation are given a quiz to determine fund of knowledge as well as a self-report Likert-scale evaluation determining their level of confidence in diagnosing and treating substance use disorders in the adolescent population. This is done before and after the three-month rotation. The null hypothesis was that there is no difference between the pre- and post-evaluations. Paired t-test will be used to determine if the null hypothesis is incorrect. The alpha value of 0.05 is going to be used. **Results:** Based on the results thus far, fellows are improving on the self-report Likert-scale evaluation determining the level of confidence after participating in the rotation. Fund of knowledge as indicated by the quiz did not differ before and after the rotation. By the time of the poster presentation, four fellows will have completed the rotation for whom statistical analysis will be performed. **Conclusion:** Based on the results thus far, there are reports of increased confidence in treating the adolescent population among fellows after participating in a rotation dedicated to substance use. The diagnosis and treatment of substance use in the adolescent population is an integral part of a child and adolescent psychiatric practice; thus, the integration of a rotation dedicated to substance use during fellowship is a worthwhile endeavor.

NO. 12

ASSESSING NEWLY DEVELOPED EDUCATIONAL TOOLS TARGETING PRENATAL CARE PROVIDERS' KNOWLEDGE OF PERINATAL MENTAL ILLNESSES

Lead Author: Stephanie H. Chan, M.D.

SUMMARY:

Background: Studies have shown prenatal care providers report a lack of confidence and knowledge in treating perinatal mental illnesses, which leads to poorer outcomes in mother and child. **Objective:** Within a collaborative care model, we sought to improve prenatal care providers' psychiatric knowledge with newly developed educational tools. **Methods:** OB/Gyn PGY1–4 residents at LAC+USC were assessed anonymously with a 13-question quiz on perinatal psychiatric knowledge in mid-2014 (n=45) and were provided 1) Pocket guides; 2) Grand round lectures: and 3) One-year clinical experience with psychiatric collaboration as the educational tools. Participants (n=21) were reassessed at end of the academic year in May 2015. **Results:** Mean total score improved by 14% ($t=3.78$, $p<0.0005$). Specifically, statistically significant improvement was found for questions on screening tools ($t=3.90$, $p<0.0025$) and general psychiatric knowledge ($t=3.98$, $p<0.0005$). Within that subgroup,

statistically significant improvement was found for crisis intervention (t=2.63, p<0.01), diagnosis (t=1.73, p<0.05) and differentiating postpartum depression and psychosis (t=4.13, p<0.0005). No statistically significant improvement was found for referral algorithm, epidemiology and Axis II pathology. **Conclusion:** The educational tools are helpful in improving perinatal psychiatric knowledge, which will likely lead to increase comfort in prenatal care providers to manage mentally ill women.

NO. 13
WITHDRAWN

NO. 14
DISCUSSING THE BLEEDING RISK OF CO-ADMINISTERED PAROXETINE AND WARFARIN
Lead Author: Beatriz Cruz Alvarez, M.D.
Co-Author(s): Jennifer M. Erickson, D.O., Alan Yancovitch, M.D., Seema Quraishi, M.D., Daniel Safin, M.D., Kenneth Ashley, M.D., Joel Wallack, M.D.

SUMMARY:
Background: As the U.S. population ages, psychiatrists are more frequently called upon to manage the psychiatric presentations of patients who have complex medical comorbidities. Medical conditions such as atrial fibrillation and history of clots often lead to treatment with blood thinners such as warfarin. Doctors are well versed in educating their patients about the risks and signs of bleeding when prescribing warfarin, but may forget to revisit this education when patients start medications that can interact with warfarin. Antidepressants are independently associated with bleeding risk secondary to platelet dysfunction. Furthermore, some antidepressants can also interact with the metabolism of warfarin. We discuss a case of a patient who presented twice with increased bruising, bleeding and elevated INR after taking both paroxetine and warfarin. We will provide a literature review of the risk of bleeding associated with antidepressant and warfarin co-administration. We discuss when psychiatrists should discuss bleeding risk with their patients and what signs patients should watch for. **Case:** A 50-year-old male with a history of depression on paroxetine and atrial fibrillation on warfarin presented to the hospital with spontaneous bleeding and bruising. He had been taken off warfarin for elevated INR one week prior. One month ago, his dose of paroxetine was doubled. Psychiatry was consulted for persistent INR and concern for a warfarin overdose. The patient and his family denied accidental use and reported that warfarin had been stopped. No new prescriptions were written or picked up at the pharmacy. After paroxetine was discontinued, INR slowly lowered, and the patient was discharged with outpatient follow up. **Methods:** We conducted a literature search of PubMed using the search terms “warfarin,” “INR,” “paroxetine,” “patient education” and “antidepressants." We limited our search to publications in English written between 2005 and 2015. **Results:** 116 articles were initially found using the search terms warfarin and patient education, 20 were found with INR and antidepressant, and 59 were found with warfarin and antidepressant. Of the articles reviewed, only 14 discussed interactions between antidepressants and warfarin. While many articles discussed patient education and ways to self-monitor risks associated with warfarin, none discussed how and when providers should educate patients about the bleeding risk of co-occurring administration of warfarin and an SSRI. **Conclusion:** Depression frequently co-occurs with other chronic medical disorders. Psychiatric practitioners need to be aware of potential dangerous interactions between warfarin and antidepressants in order to coordinate with primary care providers and educate patients about the risk of bleeding. It is important to be able to enlist patients’ help in monitoring for drug-drug interactions and inform them of periods during which they maybe at increased risk of bleeding.

NO. 15
WITHDRAWN

NO. 16
IMPLEMENTING PHARMACOGENETIC TESTING INTO PSYCHIATRIC RESIDENCY TRAINING: A QUALITY IMPROVEMENT PROJECT
Lead Author: Adriana B. de Julio, M.D., M.Sc.
Co-Author(s): Ryan Glynn, M.S., Bernadette M. Stevenson, M.D., Ph.D.

SUMMARY:
Background: Genetic testing has made individualized treatment possible in the fields of immunology and oncology. In psychiatry, the STAR-D study found a high non-response rate to initial antidepressant trial and a high rate of adverse side effects. It has been postulated that this may be explained by individual differences in drug metabolism due to variations in cytochrome p450 enzymes, suggesting that a more individualized approach to treatment may also be

useful in psychiatry. Recently, commercial genetic tests have become available to assess an individual's genotype for the major cytochrome p450 enzymes responsible for psychotropic drug metabolism including CYP2D6, CYP2C19, CYP2C9, CYP3A4 and CYP2B6. It also identifies gene mutations in the serotonin transporter SLC6A4 and the HTR2A serotonin receptor Type 2A, which are involved in predicting response to and likelihood of experiencing adverse effects to SSRIs. Despite the potential for pharmacogenetic testing to guide treatment decisions and optimize dosing, psychiatrists have been slow to implement this testing into their clinical practice, often citing unfamiliarity with available tests and cost as limiting factors. The purpose of this project was to implement pharmacogenetic testing in an outpatient clinic and monitor how clinicians used the test results. **Methods:** After researching several commercially available genetic testing options, we established an account with an FDA-approved company that has been supported by clinical studies published in peer-reviewed journals. Clinic patients were considered for testing who were diagnosed with treatment-resistant depression, had a history of multiple failed medication trials or were sensitive to multiple medications. After obtaining informed consent for genetic testing, noninvasive DNA samples were obtained during a routine office visit. Pharmacogenetic test results were then shared with the patient at their next appointment. **Results:** Twenty-nine patients (21 women, aged 16–73) were tested for psychotropic metabolism between November 2014 and June 2015. Seventy percent of residents utilized the test during this time. . Based on genetic testing, clinicians increased or decreased medication dosage about 35% of the time, discontinued medication about 15% of the time and started a new medication about 38% of the time. Genetic tests revealed some interesting trends in our patient population: 86% had ultrarapid metabolism at CYP1A2, 72% had a reduced response at SLC6A4 and 38% had mutations at the HTR2A receptor. **Conclusion:** Pharmacogenetic testing provided valuable information that influences clinician treatment decisions. Given the availability of testing and increased coverage by insurance carriers, it is important to begin programs to educate and train psychiatric residents on the use of this clinical tool. Exactly how these decisions ultimately affect patient outcomes is currently being analyzed from this data set.

NO. 17

THE RELATIONSHIP BETWEEN CHILDHOOD TRAUMA, IMPULSIVITY AND SUICIDALITY IN AN INPATIENT SAMPLE

Lead Author: Laura DeRubeis, B.A.
Co-Author(s): Kahlen Hong-Seon Kim, Firouz Ardalan, Thachell Tanis, Igor Galynker, M.D., Ph.D., Lisa J. Cohen, Ph.D.

SUMMARY:

Background: While research has shown both childhood trauma and impulsivity to be risk factors for suicidality, few studies look at the relationship between childhood trauma and impulsivity with regard to suicidality. This study includes an analysis of independent effects of impulsivity and childhood trauma on suicidal ideation and attempts in an inpatient sample. We predict impulsivity will mediate the relationship between childhood trauma and suicidality, such that childhood trauma will not be a significant predictor of suicidality (both ideation and attempts) after accounting for impulsivity. **Methods:** Subjects were recruited from an inpatient psychiatric service in a large urban hospital. Childhood trauma was evaluated using the Childhood Trauma Questionnaire (CTQ), a 28-item questionnaire, with a 5-point Likert scale, which measures five types of maltreatment: emotional, physical and sexual abuse and emotional and physical neglect. Two scales were used to assess impulsivity: The Barratt Impulsivity Scale (BIS) and the Behavioral Activation Scale (BAS), which has three subscales: drive, fun seeking and reward responsiveness. Three items from the CSSRS, a clinician-administered questionnaire, were used to assess suicidality: intensity of lifetime suicidal ideation on a 5-point Likert scale, actual suicide attempts within a lifetime and the number of actual attempts across a lifetime. **Results:** Childhood trauma was measured by the CTQ factor, a composite variable of the five CTQ scales (eigenvalue of 3.0, accounting for 60% of the variance). All CTQ variables loaded on this factor with factor loadings of at least 0.6. Impulsivity was measured using the BIS and BAS factors. The BIS factor is a principal component of the three BIS scales with eigenvalue of 2.0, accounting for 68% of the variance. All BIS variables loaded on this factor, with factor loadings of at least 0.79. The BAS factor is a principal component of the three BAS scales with an eigenvalue of 2.0, accounting for 68% of variance. All BAS variables loaded on this factor, with factor loadings of at least 0.79. In multiple linear regression

analyses, childhood trauma (CTQ factor), but not impulsivity (either BIS or BAS factors), had a significant independent association with suicide attempts (β=0.383). In contrast, both childhood trauma (CTQ factor β=0.263) and impulsivity (BIS factor β=0.277) and (BAS factor β=0.229) had significant independent effects on suicidal ideation. **Discussion:** Our findings are consistent with prior research showing a relationship between childhood trauma and impulsivity with suicidality. However, our results contradict previous findings suggesting that impulsivity is a potent risk factor for suicide attempts and, as such, suggest that impulsivity may have divergent relationships with suicidal ideation and attempts. Our results also highlight the pernicious effect of childhood trauma with regard to suicide risk.

NO. 18

STREP, TICS AND PANDAS, OH MY!

Lead Author: Kanwaldeep Dhillon, M.D.
Co-Author(s): A. Mistry, B. A. Jacobs, R. S. Daily

SUMMARY:

Background: Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS) is theorized to be an autoimmune disease in which children develop neuropsychiatric symptoms in relation to a recent group A streptococcal (GAS) infection. Auto-antibodies are developed after infection and cross-react with neuronal tissues, causing exacerbation of symptomatology. **Case:** SH, an 11-year-old female, presented for worsening of her preexisting tics. She had been previously diagnosed with Tourette's syndrome. Her symptoms were well controlled with clonidine and topiramate, but recently, over the last four months, she and her family noticed a sudden increase in severity and frequency of her tics. Regardless of SH's adherence, previous treatment was inadequate, and tics impaired her performance at school and disrupted her functioning at home. SH was not on any additional medications and had no history of developmental delay, and past medical history was otherwise nonsignificant. Thorough chart review revealed SH had several recent sore throats preceding the change in her tics. PANDAS was suspected, and investigations demonstrated antistreptococcal antibody titers were under 25, suggesting prior infection, and Cunningham Panel, an auto-antibodies panel specific for PANDAS, was significant for increased calcium-/calmodulin-dependent protein kinase II activity. Together, these findings and the overall clinical picture indicated a diagnosis of PANDAS. SH's tics were managed by continuing topiramate at the same dosage but discontinuing clonidine and switching to guanfacine. SH was referred to counseling for management of the psychosocial stresses caused by her condition. **Discussion:** PANDAS is seen in the pediatric population from ages three to puberty. In this case, SH was within the age of onset, and her presentation was consistent with PANDAS because of her prior diagnosis of Tourette's syndrome, which symptoms (the tics) worsened acutely after a recent GAS infection. The antibodies are a confirmatory test and are not required to diagnosis PANDAS, as it is a clinical diagnosis. Often, antibody testing is skewed due to duration of GAS infection from initial testing and antibiotic therapy. Clinicians should consider PANDAS in children with a history of OCD or tic disorders that present with acute exacerbation of symptoms.

NO. 19

MANAGEMENT OF PSYCHOSIS IN AN AIDS PATIENT DURING FEBRILE NEUTROPENIA: A CASE REPORT

Lead Author: Jennifer M. Erickson, D.O.
Co-Author(s): Simona Goschin, M.D., Alan Yancovitch, M.D., Kenneth Ashley, M.D., Joel Wallack, M.D., Daniel Safin, M.D.

SUMMARY:

Background: Consultation-liaison psychiatrists are often called to manage psychiatric symptoms in medically fragile patients. Psychotic patients with blood dyscrasias pose a particularly challenging dilemma since antipsychotics may worsen agranulocytosis. We present a case of an acquired immune deficiency syndrome (AIDS) patient who presented with febrile neutropenia, significant pancytopenia and severe psychotic symptoms, which were interfering with patient and staff safety. We use this case to discuss a literature review on the topic. **Case:** The patient is an undomiciled, 30-year-old female with history of AIDS with a CD4 count of 1 and schizophrenia who presented with febrile neutropenia and sepsis. Psychiatry was consulted for "odd behavior." On evaluation, the patient had delusions regarding seeing her dead family members on television, severe thought blocking, internal preoccupation, bradyphrenia and paranoid delusions. After reviewing the literature on neutropenia, we recommended using lorazepam for agitation. As her fever resolved, white count improved, and with the agreement of hematology,

we started haloperidol for psychosis without recurrence of neutropenia. The patient became calmer, was able to transition to oral medications and was eventually discharged to outpatient psychiatry with infectious disease and hematology follow-up. **Methods:** We conducted a PubMed database literature search using the keywords “HIV Positive,” “AIDS,” “Psychosis,” “Neutropenic Fever,” “Agranulocytosis,” and “Antipsychotic." Articles were limited to full-text English-language publications of human trials written between 2005 and 2015. **Results:** 101 articles were initially identified with the search terms “HIV Positive” and “Psychosis." 176 articles were found relating agranulocytosis and antipsychotics. Four additional articles were found with the search terms “neutropenic fever” and “psychosis." Of the 281 articles, only three discussed patients who had psychosis and neutropenia. One additional article discussed a patient who developed agranulocytosis on psychiatric medications. We were unable to find any article that discussed management of psychosis in a patient with AIDS and febrile neutropenia. **Conclusion:** Antipsychotic medications as a class have been implicated as a cause of neutropenia. However, untreated psychosis can lead to medication noncompliance and potential safety issues. When approaching the treatment of a patient with febrile neutropenia and psychosis, early involvement and co-management with hematology is recommended. Furthermore, limiting pharmacotherapy to agents such as benzodiazepines while the patient is still symptomatic may be necessary. Once a patient has improved white cell counts and is afebrile, adding an antipsychotic could be attempted under close supervision. Further studies need to be done to explore the safest way to manage psychosis in this fragile population.

NO. 20

PREMATURE DEATHS OF CONSUMERS IN A COUNTY MENTAL HEALTH SYSTEM IN SOUTHERN CALIFORNIA

Lead Author: Carlos Fernandez, M.D.
Co-Author(s): Shalin Patel, M.D., Julia Hoang, M.D., Janet Charoensook, M.D., Jerry Dennis, M.D.

SUMMARY:

Background: In 2006, the NASMHPD Medical Directors Council Report showed that individuals with serious mental illness die on average 25 years earlier than the general population, with 60% of premature deaths due to medical conditions, such as cardiovascular, pulmonary and infectious diseases. The Riverside County Department of Mental Health (RCDMH) in Southern California conducted a study of all deaths of RCDMH clients over an eight-year period from 2008 to 2015. The aim of this study was to determine how the outcomes of care for Riverside County’s low-income population compare to what was reported nationally in 2006. The study also examined the effects of key demographic and clinical factors on the ultimate outcome of care (premature deaths) of county mental health clients. **Methods:** A mortality review was conducted on 459 reported deaths of individuals who were served by any RCDMH mental health or substance abuse program. RCDMH established a Morbidity and Mortality (MandM) Committee along with a policy and procedures for system-wide reporting of all adverse incidents involving deaths. A standardized format was developed to guide the death review process from the initial local clinic adverse incident report through final MandM Committee review and case closure. The MandM policy provides a detailed quality of care review to be conducted for each death to determine the cause of death and to identify demographic and clinical variables that may be related to premature deaths among the mental health clients served by the county’s mental health system. Each death was analyzed by age, gender, ethnicity/race, marital status and location of the client services within the county. Deaths were further analyzed by type of death, be it due to natural (organ system) versus unnatural (suicide, accidental death or being a victim of homicide) causes. Suicide deaths were analyzed by method of suicide. Deaths by overdose were analyzed to compare accidental and intentional (suicide) overdoses. **Results:** Individuals who were served by the RCDMH experience an alarming number of premature deaths. The average age at death of county mental health clients was only approximately 42. If the death was by natural causes, the average age of death was 47. For unnatural deaths, the average age of death was 39. A detailed data analysis will be submitted at a later date. **Conclusion:** This study shows that the outcomes of care for mental health clients of Riverside County are similar to what was reported by the NASMHPD Medical Directors Council in 2006. This study hopes to prompt other local mental health systems to begin to conduct similar research studies of adverse incidents and outcomes of care in an effort to determine what factors may be contributing to the

high numbers of premature deaths of mental health clients.

NO. 21

METABOLIC ABNORMALITIES RELATED TO TREATMENT WITH SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN PATIENTS WITH SCHIZOPHRENIA OR BIPOLAR DISORDER

Lead Author: Katrine Kveli Fjukstad, M.D.
Co-Author(s): Anne Engum, M.D., Ph.D., Stian Lydersen, Ph.D., Ingrid Dieset, M.D., Ph.D., Nils Eiel Steen, M.D., Ph.D., Ole A. Andreassen, M.D., Ph.D., Olav Spigset, M.D., Ph.D.

SUMMARY:

Objective: This study examined the effect of selective serotonin reuptake inhibitors (SSRIs) on cardiovascular risk factors in patients with schizophrenia or bipolar disorder. **Methods:** We used data from a cross-sectional study on 1,301 patients with schizophrenia or bipolar disorder, of whom 280 were treated with SSRIs. The primary outcome variable was the serum concentration of total cholesterol. Secondary outcome variables were low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL) cholesterol, triglyceride and glucose levels, body mass index (BMI), waist circumference, and systolic and diastolic blood pressure. **Results:** After adjusting for potential confounders, a SSRI serum concentration in the middle of the reference interval was associated with an increase in the total cholesterol level by 14.56mg/dL (95% confidence interval (CI) [5.27, 23.85], p=0.002), the LDL cholesterol level by 8.50mg/dL (95% CI [0.22, 16.77], p=0.044) and the triglyceride level by 46.49mg/dL (95% CI [23.53, 66.46], p<0.001). There were also significant associations between the SSRI dose and total and LDL cholesterol levels. **Conclusion:** This study is the first to reveal significant associations between SSRI use and metabolic abnormalities in patients with schizophrenia or bipolar disorder. These findings should lead to an even closer monitoring of dyslipidemia and weight gain in patients with these disorders treated with an SSRI.

NO. 22

MENTAL HEALTH SCREENING IN NATIONAL COLLEGIATE ATHLETIC ASSOCIATION DIVISION I ATHLETES: IS THE PREPARTICIPATION EVALUATION FORM EFFECTIVE?

Lead Author: Elyse Galles, B.A.

SUMMARY:

Objective: Evaluate the screening practices and preparticipation evaluation (PPE) forms used to identify college athletes at risk for mental health disorder, particularly depression. **Methods:** Survey and collection of PPE forms for incoming and returning student athletes was conducted at National Collegiate Athletic Association (NCAA) Division I universities. All 347 NCAA Division I universities were invited to submit their PPE forms, with forms collected from 219 programs (63%). Each PPE was screened for the following information: if the athlete had a history of any mood disorder or had been seen by a psychiatrist or psychologist, if the athlete had a family history of depression or other mood disorder, and if it included any of the National Athletic Trainer Association's (NATA) recommended mental health screening questions. Specifically, NATA's recommended screening questions include answering yes or no to the following: "I often have trouble sleeping," "I wish I had more energy most days of the week," "I think about things over and over," "I feel anxious and nervous much of the time," "I often feel sad or depressed," "I struggle with being confident," "I don't feel hopeful about the future," "I have a hard time managing my emotions (frustration, anger, impatience)" and "I have feelings of hurting myself or others." **Results:** All universities (100%) required a PPE for incoming athletes. Only four universities (2%) included all recommended screening questions; 121 universities (55%) included any recommended mental health screening questions, and only 99 (45%) screened for the symptom of depressed mood. FIve programs (2%) used alternative standardized screening tools including the Generalized Anxiety Disorder 7-item (GAD-7) scale, Patient Health Questionnaire (PHQ-9) and the Center for Epidemiologic Studies Depression Scale–Revised (CESD-R). Relevant items contained in PPE forms include asking about personal history of mental health disorders or treatment by a psychiatrist or counselor (115 [53%]), family history of depression or mental health disorders (43 [20%]), and family history of suicide (3 [1%]). Seventy-one programs (32%) have no mental health questions in their PPE forms. **Conclusion:** The current PPE forms used by NCAA Division I universities may not effectively screen for depression or other mental health disorders. There is no cohesive sentiment for what constitutes appropriate mental health screening in incoming athletes.

NO. 23

EXACERBATION OF PSYCHOSIS DURING TITRATION FROM FLUPHENAZINE TO ARIPIPRAZOLE: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Nicholas J. Genova, M.D.

SUMMARY:

Background: An expanding body of literature describes instances of exacerbation or induction of psychosis after initiating aripiprazole. The medication's partial dopamine agonism may explain this effect and is invariably implicated as a potential cause in similar case reports. Based on the available literature, this may occur most often in those with extensive prior antipsychotic exposure. This case is an adult inpatient with schizoaffective disorder and extensive prior antipsychotic exposure who suffered from this effect, which uniquely occurred following three months of fluphenazine treatment. **Case:** A 41-year-old female with schizoaffective disorder, multiple prior hospitalizations and a past requirement of high doses of multiple concomitant antipsychotics was admitted to a university hospital. A period of homelessness and medication nonadherence preceded her arrival via police with delusional thinking, bizarre behavior and disorganized speech. She was treated with fluphenazine during the first three months of her hospitalization. She gradually became less disorganized and involved in less frequent behavioral disturbances previously prompted by grandiose and paranoid delusions. However, her speech remained halting and rapid; she was chronically disheveled and persistently intrusive with others. Due to persistent psychosis, the patient was cross-titrated to aripiprazole. As aripiprazole was increased to 30mg per day, she became more delusional, aggressive and bizarre. The patient worsened significantly after initiating aripiprazole, as suggested by a retrospective review of her medical record, and was again treated with typical antipsychotics. **Discussion:** This case further exposes a unique adverse effect of aripiprazole, usually observed in patients with prior and recent exposure to high-dose antipsychotics. This case is unique in that her preceding antipsychotic was fluphenazine, which has not been specifically indicated in available literature. Fluphenazine may have fostered a state of dopamine sensitivity, making this patient susceptible to worsened psychosis when exposed to the partial dopamine agonism of aripiprazole. The above suggests the use of caution during the introduction of aripiprazole, especially in patients with severe psychosis and high antipsychotic dosage requirements. However, due to the heterogeneity of available literature, larger, more standardized research is required on this topic to make more substantive conclusions.

NO. 24

MENTAL ILLNESS AMONG BHUTANESE REFUGEES SETTLED IN THE UNITED STATES: A REVIEW OF CURRENT EVIDENCE

Lead Author: Aditi Giri, M.B.B.S.

SUMMARY:

Two small countries in South Asia, Nepal and Bhutan, are among the poorest in the world. Nepali citizens settled in Bhutan for many generations but were systematically driven out by the Bhutanese government due to interethnic tension. As of April 8, 2014, 75,000 Bhutanese refugees have settled in the U.S. and 13,770 in other countries, including Australia, Canada, Denmark, the Netherlands, New Zealand, Norway and the U.K., the second largest resettlement being in Canada. Among the Bhutanese refugees who have settled in the U.S., most have been sent to larger cities such as New York City, Chicago, Syracuse, NY, and St. Louis, MO. Some have been sent to states such as Texas, Arizona, Maryland and Virginia. In Charlottesville, VA, a small college town, there are currently around 650 Bhutanese refugees per a 2013 census by the International Rescue Committee (IRC). From 2009 to 2012, there were 16 reported suicides among the 49,010 Bhutanese refugees resettled throughout the United States. Depression, social isolation, domestic violence, substance abuse and resettlement issues are likely culprits behind suicide attempts and other mental health-related issues. Many studies are underway by the CDC and other partners to better understand why the suicide rate is so high. Some refugees may have been tortured prior to fleeing Bhutan. Men are more likely to report having been tortured than women, but tortured women are more likely to report mental health conditions than tortured men. According to the International Organization for Migration (IOM), of the 55,604 refugees examined from December 2007 through December 2011, 1,694 (3.0%) were referred for psychiatric evaluation, and the study showed the most prevalent conditions to be mood disorders, including bipolar depression and major depression. However, there have been few studies to follow up on the IOM investigation from 2007–2011.

NO. 25

HEALTH CARE UTILIZATION AND COSTS ASSOCIATED WITH A CLUSTER OF FACTITIOUS DISORDER: A CASE SERIES

Lead Author: Juliet A. Glover, M.D.
Co-Author(s): Rushiraj Laiwala, M.D., James G. Bouknight, M.D., Ph.D., Rita Aregbesola

SUMMARY:

Background: Patients with factitious disorder simulate, induce and exacerbate illness to assume a sick role. There is substantial emotional and financial cost associated with factitious disorders, especially with severe and chronic forms like Munchausen syndrome. Existing literature consists primarily of case reports and a few large series. Population-based systematic studies are very limited, most likely because the disorder's inherent secretive nature thwarts traditional research methods. Furthermore, studies detailing the economic impact of factitious disorder are scarce. In this study, we assess the financial burden of factitious disorder on a health care system. **Methods:** A retrospective chart review was conducted on three patients with suspected or confirmed factious disorder evaluated within a three-month interval. Charts were reviewed for overall number of health care encounters within a local network consisting of three hospitals. Encounters were further analyzed and categorized by association with the patient's usual manner of feigned or self-induced illness. The cost associated with medical care for the most recent factitious illness episode was calculated. The total cost of care over a ten year period was also determined. **Results:** Case 1 was diagnosed with factitious disorder with definitive features of Munchausen syndrome including peregrination and pseudologia fantastica. Case 2 was highly concerning for factitious disorder. Case 3 demonstrated features of both malingering and factitious disorder. Results showed a total number of hospital encounters over a ten-year period of 126, 38 and 34 for case 1, 2 and 3, respectively. The proportion of visits associated with the patient's usual manner of feigned illness ranged from 13 to 42%. The total charge incurred during the most recent factitious illness episode was $168,146 for all three cases, with an average length of stay of seven days. Charges accumulated over a ten-year period for the three cases totaled $2,412,561. **Conclusion:** Factitious disorder has various clinical presentations and can be difficult to diagnose. It is associated with high levels of health care utilization and cost. To date, treatment and management options are limited. Nevertheless, the high cost to health care systems underscores the need for further studies and innovative methods to identify and treat this challenging disorder.

NO. 26

SELF-INFLICTED INJURY IN CHILDREN AND ADOLESCENTS: A STUDY FROM PSYCHIATRIC SERVICES OF A LATIN AMERICAN HOSPITAL

Lead Author: Paloma Andrea Guerra, M.D.
Co-Author(s): Veronica Bennett, Daniela Galdames, Valentina Leiva, Charlotte Olivares, Caterina Schiappacasse

SUMMARY:

Objective: Self-inflicted injury in children and adolescents indicates significant emotional and psychological suffering. Data are limited in Latin American countries. **Methods:** A questionnaire was used to assess self-inflicted behaviors. Children and adolescents (age 8–18) and their parents (or guardians) were assessed in an emergency department (ED) from a university hospital in Santiago de Chile, Chile, from January to December 2015. Information on socioeconomic status, family structure, education and other childhood-adolescent risk factors was also analyzed. **Results:** We report preliminary results from 49 patients who reported self-inflicted injuries. The mean age was 13.3 (SD=1.1), and 94% were female. Although the preferred method of self-injury was cutting (100%), the number of episodes varied widely, and episodes were related to interpersonal conflicts. Findings revealed that the most frequent associated psychopathology was mood disorders in 78% of previous suicide attempts. Furthermore, 32% of children and adolescents with self-inflicted behaviors reported marijuana consumption. **Conclusion:** These findings underscore the importance of considering risk factors in understanding and treating self-injuring adolescents. Although longitudinal data sets will ultimately be needed to identify developmental trajectories in self-injuring children adolescents, cross-sectional research identifying interactions between biological and psychological variables may help guide future studies. These findings underscore the importance of considering both biological and environmental risk factors in understanding and treating self-injuring children and adolescents in Latin American countries.

NO. 27

WISE, WHAT AND HOW: A SIX-SESSION DBT MINDFULNESS GROUP IN A LIMITED-RESOURCE CLINIC

Lead Author: Meredith Harewood, M.D.
Co-Author(s): Jennifer Gardner, M.D., Randye J. Semple, Ph.D.

SUMMARY:
This study explored if a time-limited skills-building group intervention based on the mindfulness module of dialectical behavior therapy (DBT) would be a feasible and effective method to treat borderline personality disorder (BPD) symptoms in a low-income community clinic that does not have resources for a full DBT program. We hypothesized that 1) It would be feasible to recruit and retain participants; 2) The intervention would be acceptable to participants; and 3) Mindfulness training would increase mindfulness skills and reduce depression, anxiety, emotion dysregulation and perceived stress when compared to treatment as usual (TAU). The study used a quasi-experimental, non-randomized, two-group design consisting of a TAU plus mindfulness group compared to a TAU control group. Seven participants attended at least one session, and five attended three or more sessions. Overall acceptability ratings were high. The sample size was insufficiently powered to detect significant changes; however, participants in the mindfulness group reported improvements on all clinical measures and increases in mindfulness. These findings suggest that the mindfulness group may be feasible to conduct and acceptable to patients in a county clinic. Results support existing research that suggests mindfulness can be an effective intervention to manage clinical symptoms associated with BPD.

NO. 28

A NATIONAL DATASET ANALYSIS ON THE ASSOCIATION BETWEEN DEPRESSION AND STROKE

Lead Author: Vineka Heeramun, M.D.
Co-Author(s): Obiora Onwuameze

SUMMARY:
Background: Traditional risk factors for stroke include diet, physical inactivity, smoking, obesity, diabetes, hypertension, atrial fibrillation and hyperlipidemia. Prior studies have shown an association of stroke with depression. We found no previous studies in the body of literature that used a national database to evaluate the association of depression and stroke. To our knowledge there are no studies that have compared rtPA (alteplase) administration in patients with depression compared to the general population. Our aims were to study the association of depression with stroke and also the rate of rtPA administration in depression versus control groups. **Methods:** Patients were pulled from the National Emergency Department Sample (NEDS) dataset. We compared patients with a depressive disorder to those who do not have depression, both presenting with stroke. We then looked into how many of those people with an acute stroke had received rtPA. Data analysis was done using the SAS version 9.3 software. The logistic regression procedure in SAS was used to assess the association between stroke and psychiatric disorder. **Results:** 307,973 patients who presented with a stroke had no depressive disorder, while 4,725 patients with depression presented with stroke. 70.43% of patients with a stroke were female in the depressed group, whereas females constituted 51.19% of the patients in the control group. In our study, the presence of depression was significantly associated with increased risk of ischemic strokes compared to the general population: 57.1% in the depressive group and 42.66% in the general population. Strokes in depressed patients were also associated with a decreased mortality both in the ER and in the hospital. The rate of tPA administration has almost doubled in the general population since 2009, while the trend in the depressed population has dropped despite an increase in strokes in 2011. **Conclusion:** The total occurrence of strokes has generally been on the rise in the general population. In our sample, the depressed group showed that the stroke risk continued to rise until 2011, after which there was a decline. Further studies are needed to see if this trend persists. So far, we only had data available up to 2012. In our study, the presence of depression was significantly associated with increased risk of ischemic strokes as compared to the general population. This could be explained by a variety of factors: depression acts on the sympathetic nervous system and hypopituitary-pituitary-adrenocortical axis and has inflammatory effects that may increase stroke risk. We also found that there has been an increase in hemorrhagic stroke both in the general population and the depressed group. Depression could increase the risk of hemorrhagic stroke due to its effect on platelet aggregation dysfunction. SSRIs used to treat depression are also involved in platelet dysfunction, leading to increased risk for bleeding.

NO. 29

AFTER THE FIRST SCRIPT: LONG-TERM USE TRAJECTORY OF OPIOIDS VERSUS NSAIDS FOR NON-CANCER PAIN

Lead Author: Lamis Jabri, M.D.
Co-Author(s): Fady Henein, M.D., Edward L. Peterson, Ph.D., Karen E. Wells, M.P.H., L. Keoki Williams, M.D., M.P.H., Brian K. Ahmedani, Ph.D.

SUMMARY:
Background: Over the last 15 years, there has been an increase in the long-term use of opioids for chronic non-cancer pain, despite little evidence to support such practice coupled with a simultaneous rise in opioid use disorders and overdoses. Similarly, long-term use of nonsteroidal anti-inflammatory drugs (NSAIDs) is associated with serious risks, such as gastrointestinal bleeding and renal disease. While both classes of analgesics are meant for short-term use, could initial prescription choices for acute pain episodes influence long-term patterns? This study compares long-term use patterns of opioids versus NSAIDs in patients who initiated either medication de novo in the context of new-onset, non-cancer-related low back pain. **Methods:** This study was approved by our health system's Institutional Review Board. Data were captured via the health system's electronic medical records and insurance claims. The study included 3,747 members between 1998 and 2012. Inclusion criteria were age ≥18 years, an incident diagnosis of lower back pain, and de novo prescription for an opioid or NSAID within two weeks of diagnosis. Exclusion criteria were any prior back pain diagnosis, procedure or surgery; any prior diagnosis of diabetes, cancer, gastrointestinal bleeding or renal insufficiency; or any prior recorded opioid or NSAID prescription fill. Continuous medication use for one year following initiation was tracked. Individuals who did not fill a prescription for either an opioid or NSAID for more than 90 days were considered to have discontinued, and any fill following such a gap was considered a restart. Data analyses included calculating rates of continuous, one-year use following initiation and restart of opioids or NSAIDs. Logistic regression compared continuous use with adjustment for age, sex and race/ethnicity. Medication restart analyses were also adjusted for time between discontinuation and restart. **Results:** The sample included de novo users of opioids (n=387) and NSAIDs (n=3,360) following a new diagnosis of low back pain. Overall, 8.5% of opioid initiates continued use for one year as compared with 2.1% of NSAID initiates. Continuous use for one year following initiation was three times more common among opioid users when compared with NSAID users (adjusted odds ratio [OR]: 3.06, p<0.001). Among those who stopped and restarted, 7.9% of opioid users subsequently continued use for one year versus 4.4% of NSAID users (OR: 1.87, p=0.044). **Conclusion:** In patients with new-onset, non-cancer-related low back pain, the choice of initiating opioid medication must be examined judiciously. Our findings indicate that long-term medication use was significantly more likely among opioid initiates when compared with NSAID initiates. Clinically, these findings have particular relevance for risk prevention, given that opioids are associated with a serious long-term risk of addiction.

NO. 30

DEPRESSION IS ASSOCIATED WITH VITAMIN D DEFICIENCY, BUT NOT WITH C-REACTIVE PROTEIN: A LARGE RETROSPECTIVE OBSERVATIONAL STUDY IN KOREAN ADULTS

Lead Author: Chan Hyun Jung, M.D.
Co-Author(s): Woo-Hyung Lee, M.D., Jeong-Kyu Sakong, M.D., Ph.D., Se-Won Lim, M.D., Ph.D., Dong-Won Shin, M.D., Ph.D., Kang-Seob Oh, M.D., Ph.D., Young-Chul Shin, M.D., Ph.D.

SUMMARY:
Background: There are some studies supporting the relation between serum vitamin D level and depression. The underlying mechanisms are not well understood, although vitamin D is known to influence the immune system, and increased inflammation affects depressed mood. Our study compares the likelihood of depression in the participants with different vitamin D status and to examine if C-reactive protein is associated with depression and affects the relationship between vitamin D status and depression. **Methods:** From 73,975 participants who received regular checkups in the Health Screening Center of one hospital from May 2012 to April 2013, we studied 52,228 participants who had blood tests for vitamin D and C-reactive protein, had completed the Center for Epidemiologic Study-Depression (CES-D) scale and were not taking antidepressant medications. Chi-square tests and t-tests were performed to determine differences in vitamin D, C-reactive protein level and confounding factors between the participants with and without depression(CES-D≥16). Logistic regression analyzed the relationship between vitamin D status and the likelihood of depression. We adjusted the regression model for potential confounding variables including C-reactive

protein level. **Results:** A significant difference was found in vitamin D status (p<0.001), but not in C-reactive protein level (p=0.294), between the participants with and without depression. The likelihood of depression was higher in the participants with vitamin D insufficiency (OR=1.228, p<0.001) and deficiency (OR=1.730, p<0.001). The relationship was still significant after adjusting for the potential confounding factors in the participants with vitamin D deficiency (AOR=1.147, p=0.015). Additional adjustment for C-reactive protein level did not weaken the association between the likelihood of depression and vitamin D deficiency (AOR=1.146, p=0.015). **Conclusion:** The results from this large retrospective observational study show a significant association between the likelihood of depression and vitamin D deficiency and no association with C-reactive protein in Korean adults. Longitudinal and randomized studies are needed to verify the causality and the therapeutic or protective effect of vitamin D supplement on depression.

NO. 31

COMPARISON OF DEPRESSIVE SYMPTOMS BETWEEN SOCIAL ANXIETY DISORDER AND PANIC DISORDER

Lead Author: Chan Hyun Jung, M.D.
Co-Author(s): Woo-Hyung Lee, M.D., Sun-Young Kim, M.D., Jeong-Kyu Sakong, M.D., Ph.D., Se-Won Lim, M.D., Ph.D., Dong-Won Shin, M.D., Ph.D., Young-Chul Shin, M.D., Ph.D., Kang-Seob Oh, M.D., Ph.D.

SUMMARY:

Background: The presence of comorbid depression in patients with anxiety disorders exacerbated the severity of the illnesses, social and vocational impairment, the likelihood of alcohol or substance abuse, and the risk of suicide. The comorbidity can predict poor responses to the treatment. Thus, this study investigated the characteristics of depressive symptoms in patients with social anxiety disorder and panic disorder in comparison to patients with depressive disorder. **Methods:** Patients were recruited from the individuals who visited the Kangbuk Samsung hospital psychiatric clinic in Seoul, Korea for the first time for the treatment of anxiety disorders. The patients included in the study were diagnosed using the Mini International Neuropsychiatric Interview–plus (MINI-plus). This study included 132 social anxiety disorder, 128 panic disorder and 64 depressive disorder (major depressive disorder, dysthymia, etc.) patients. We excluded the patients with comorbid psychiatric disorders to reduce potential bias introduced by comorbidity. The Beck Depressive Inventory (BDI) was used to measure depressive symptoms. We divided BDI into three categories originally described by Shafer AB: negative attitude toward self, performance impairment and somatic symptoms. We used ANOVA to compare the depressive symptoms of patients with social anxiety, panic and depressive disorders. Potential covariates were adjusted using ANCOVA. **Results:** The category of negative attitude toward self was noticeable in social anxiety disorder (SAD 0.54±0.23, panic disorder 0.41±0.17, depressive disorder 0.46±0.10, p<0.001). The categories of performance impairment and somatic symptoms were remarkable in panic disorder (performance impairment: SAD 0.39±0.21, panic disorder 0.44±0.14, depressive disorder 0.40±0.09, p=0.009; somatic symptoms: SAD 0.07±0.13, panic disorder 0.15±0.12, depressive disorder 0.14±0.08, p<0.001). **Conclusion:** This study compared the depressive symptoms in patients with social anxiety disorder, panic disorder and depressive disorder. The depressive symptoms categorized as negative attitude toward self were remarkable in social anxiety disorder, and the symptoms categorized as performance impairment and somatic symptoms were noticeable in panic disorder.

NO. 32

THE ASSOCIATION OF PHQ-1 AND PHQ-9 SCREENING RESULTS WITH READMISSION RATES OF MEDICALLY AND SURGICALLY ADMITTED PATIENTS

Lead Author: Dheeraj Kaplish, M.D.
Co-Author(s): William DeMarco, D.O., Olajide Fawehinmi, M.D., Louis Gainer, Brenda Bahnson, L.I.C.S.W., Alex N. Sabo, M.D.

SUMMARY:

Background: Depression and suicidality are often underdiagnosed, unrecognized and untreated in hospital practice. Depression worsens outcome of treatment for coronary artery disease, diabetes, congestive heart failure and other medical conditions. We previously found that by using a Patient Health Questionnaire–1 (PHQ-1) screening method to trigger a PHQ-9 assessment, we detected a higher incidence of clinical depression and suicidality in surgically and medically admitted Inpatients. There are only a handful of studies correlating PHQ-9 scores with hospital readmission rates. In this study, we used our PHQ-9 data to correlate the PHQ-9 score with medical and surgical

readmission rates. **Methods:** We reviewed 105,277 medical and surgical admissions between January 2010 and December 2014. Of the 105, 277 patients admitted, nurses had recorded answers for 58,945 patients to the yes or no question “During the past month, have you been bothered by feeling down, depressed or hopeless?" 6,951 (11.79%) answered “yes” to the question. Social workers were able to assess 1,702 of these “yes” responders by obtaining a PHQ-9. Those 1,702 PHQ-9s represented 1,196 different patients. 862 of 1,196 patients were admitted for hospital-level care. 735 were never readmitted, and 127 were readmitted one or more times. The two groups were compared, and we looked at readmissions within 30 days of last discharge date. Chemical dependency treatments, behavioral health, hospice and rehabilitation admissions were excluded. All available 1,702 PHQ-9 forms were tabulated and analyzed in an excel spreadsheet. For the purpose of this study, a score of 5–9 on PHQ-9 constituted mild depression, 10–14 moderate depression, 15–19 moderately severe depression and 20–27 severe depression. The readmitted patient group was compared to the non-readmitted patient group. Analysis consisted of descriptive statistics and analysis of variance using Minitab16. **Results:** The average PHQ-9 score of the readmitted group was noted to be 10.30. The average PHQ-9 score for non- readmitted group was found to be 9.06. Statistically significant results were obtained using ANOVA (p=0.048). The average readmission rate for patients who completed the PHQ-9 assessment was 14.73%, compared to an overall hospital readmission rate of 10.97%. **Discussion:** Our data suggest that moderate depression (PHQ-9>9) correlates with an increased 30-day medical or surgical readmission rate. That is 30% greater than the overall hospital readmission rate. Replication studies with larger sample sizes are recommended to confirm these findings.

NO. 33

FACTORS ASSOCIATED WITH INSOMNIA IN THYROID DISORDER

Lead Author: Minsu Kim
Co-Author(s): Jin Sook Cheon, Byoung Hoon Oh

SUMMARY:

OBJECTIVE : Know the frequency and clinical characteristics of insomnia, and related variables to insomnia, in patients diagnosed with thyroid disorders. **Methods:** For 90 patients with thyroid disorders, structured interviews were performed. Insomnia was evaluated using the Korean Version of the Insomnia Severity Index (ISI-K). According to the cutoff score of 15.5 on the ISI-K, subjects were divided into the groups of thyroid patients with insomnia (n=21) and those without insomnia (n=69) at first and then statistically analyzed. **Results:** 1) Insomnia could be found in 23.33% of thyroid patients. 2) Thyroid patients with insomnia had significantly more comorbidities of physical and psychiatric illnesses ($p<0.005$), more hyperthyroidism ($p<0.01$), higher T3 ($p<0.05$), and longer than 60 minutes of sleep latency ($p<0.001$). 3) Among scores of the ISI-K, total scores($p<0.001$) and scores for initial sleep ($p<0.05$), sleep satisfaction ($p<0.005$) and distress ($p<0.05$) were significantly higher in thyroid patients with insomnia. 4) Variables associated with insomnia in thyroid patients were as follows. Total scores of the ISI-K had significant correlation with psychiatric illness ($\rho=-0.509$, $p<0.05$), A1 (initial) with thyroid disorders ($\rho=-0.506$, $p<0.05$) and thyroid medication ($\rho=-0.598$, $p<0.01$), A2 (middle) with shift work ($\rho=-0.467$, $p<0.05$), B (satisfaction) with psychiatric illness ($\rho=-0.526$, $p<0.05$), C (interference) with psychiatric illness ($\rho=-0.481$, $p<0.05$), and E (distress) with occupation ($\rho=0.495$, $p<0.05$) and physical illness ($\rho=-0.495$, $p<0.05$). CONCLUSION : Insomnia was not rare among thyroid patients. According to the presence of insomnia, clinical characteristics, including sleep quality as well as quantity, seemed to be different.

NO. 34

ASSOCIATIONS BETWEEN ACTIGRAPHY-ASSESSED SLEEP ONSET LATENCY, INFLAMMATORY MARKERS AND INSULIN RESISTANCE: MIDLIFE IN THE UNITED STATES (MIDUS) STUDY

Lead Author: Taeho Kim, M.D.
Co-Author(s): Eun Lee, M.D., Ph.D.

SUMMARY:

Background: Disturbed sleep has been associated with increased insulin resistance in previous studies, and there is a growing body of evidence that activation of inflammatory pathways plays a crucial role in the development of insulin resistance. This study examined associations between objectively measured sleep, inflammatory markers and insulin resistance. **Methods:** Cross-sectional data collected from 2004 to 2009 from the Midlife in the United States II (MIDUS II) biomarker project were used. Study data were collected at the MIDUS Research Center at the University of Wisconsin–Madison and participants’ homes. Participants included 374 (138

men and 236 women, mean age=54.3, range=34–83) community-based midlife individuals who underwent seven nights of wrist actigraphy. No interventions were performed. **Results:** To reveal factors associated with insulin resistance and inflammatory markers, age and statistically significant variables in univariate regression analyses were entered to multivariate regression analyses. Insulin resistance was estimated by HOMA-IR. In women, higher sleep onset latency as well as higher IL-6 and CRP were associated with higher insulin resistance after adjustment for possible confounding factors. Also, higher sleep onset latency was associated with higher IL-6 and CRP. In men, no sleep measures were associated with insulin resistance, IL-6 or CRP. **Conclusion:** The results show that difficulty initiating sleep contributes to development of insulin resistance, particularly in midlife women. The activation of inflammatory pathways along with physiological hyperarousal may be one of the key underlying mechanisms.

NO. 35

MENTAL IMAGERY AND ITS RELATION TO EMOTION REGULATION IN EUTHYMIC PATIENTS WITH BIPOLAR I DISORDER

Lead Author: Keun You Kim, M.D.
Co-Author(s): Sung Hwa Kim, M.D., Vin Ryu, M.D., Ph.D., Hyun-Sang Cho, M.D., Ph.D.

SUMMARY:

Background: Mental imagery is the experience of accessing perceptual information from memory and is proposed to act as an emotional amplifier in patients with bipolar disorder. Recent reports have shown higher use of mental imagery and potential relation of mental imagery with mood instability and suicidal cognition in bipolar disorder. Difficulties in emotion regulation that may contribute to pathophysiology of bipolar disorder are more common even in the euthymic state of patients with bipolar disorder. We investigated characteristics of imagery use or experience and the relationship between mental imagery and emotion regulation in patients with bipolar I disorder using self-report measurements. **Methods:** Fifty euthymic bipolar I patients and 50 age- and sex-matched healthy control subjects participated. For assessment of difficulties in emotion regulation, we applied the Korean version of the Difficulties in Emotion Regulation Scale (K-DERS). The Spontaneous Use of Imagery Scale (SUIS) and Vividness of Visual Imagery Questionnaire (VVIQ) were conducted to assess tendency toward general imagery use and vividness of imagery, respectively. Mood status was measured by the Young Mania Rating Scale and Montgomery-Åsberg Depression Rating Scale. **Results:** Patients with bipolar I disorder showed significantly lower scores in VVIQ-Open, but not in SUIS, than healthy participants (t=−2.043, p=0.044). Bipolar patients also showed significantly higher scores in K-DERS than healthy controls (t=2.091, p=0.039). However, simple regression analysis determined no association between the ratings of VVIQ or SUIS and K-DERS. There were also no significant relations between characteristics of mental imagery and mood symptom scores. **Conclusion:** These findings suggest that euthymic bipolar patients maintain a high level of vividness in mental imagery despite normal mood status. However, we did not find any relationships between emotion regulation and mental imagery. More delicate and diverse measures, such as specific or experimental imagery or emotion regulation tasks, will be needed to demonstrate the relationship of two aspects. **Keywords:** Bipolar Disorder, Mental Imagery, Emotion Regulation

NO. 36

ASSOCIATION BETWEEN ALU INSERTION/DELETION POLYMORPHISM ON THE TPA GENE AND MIRTAZAPINE RESPONSE IN KOREANS WITH MAJOR DEPRESSION

Lead Author: Daseul Kim, M.D.
Co-Author(s): Hun Soo Chang, Ph.D., Eunsoo Won, M.D., Ph.D., Byung-Joo Ham, M.D., Ph.D., Min-Soo Lee, M.D., Ph.D.

SUMMARY:

Background: Brain-derived neurotrophic factor (BDNF) is involved in the pathophysiology of depression and the mechanism of action of antidepressant medications. The mature BDNF is derived from proBDNF through tissue-type plasminogen activator (tPA) and the plasminogen system in the brain. Therefore, tPA might be involved in the development of major depressive disorder (MDD) and its response to antidepressant treatment. Thisstudy determined the relationship between the Alu insertion/deletion (I/D) polymorphism on the tPA gene and the clinical outcome of mirtazapine treatment in Korean MDD patients. **Methods:** 422 patients were enrolled in this study, and symptoms were evaluated by the 21-item Hamilton Depression Rating Scale (HAM-D). During the treatment period of the study, all subjects took mirtazapine 15–60mg/d. Genotyping

for the polymorphism was performed by PCR using DNA extracted from subjects' peripheral blood. After 1, 2, 4 and 8 weeks of mirtazapine treatment, the association between Alu I/D polymorphism on the tPA gene and response/remission outcomes were evaluated using logistic regression analysis. Differences of reduction in the HAM-D score between genotypes were also analyzed using linear regression analysis. **Results:** Clinical profiles for gender, mean age, age at onset, frequency of suicide attempts, family history of MDD or other psychotic diseases, and baseline HAM-D scores did not significantly differ among the three genotypes. The subjects were in Hardy-Weinberg equilibrium (p=0.221). The proportion of I/I homozygote in responders was higher than that in non-responders, whereas the proportion of D/D homozygote in responders was lower than that in non-responders at eight weeks of treatment (OR=1.57, 95% CI [1.04, 2.38], p=0.032). The frequency of I allele on tPA Alu I/D locus was higher in responders than non-responders at eight weeks (59.4% vs. 47.9%, respectively, OR=1.59, 95% CI [1.06, 2.39], p=0.029). The percent decline of HAM-D score in I allele carriers was significantly larger compared to that of D allele homozygotes at two and eight weeks after mirtazapine treatment (p=0.035 and 0.007, respectively). The proportion of I allele carriers were significantly higher in remitters than in non-remitters, whereas the proportion of D/D homozygote in remitters was lower in remitters than non-remitters at eight weeks (OR=2.20, 95% CI [1.01, 4.80], p=0.047). **Discussion:** These results show that treatment response and remission to mirtazapine were significantly associated with Alu I/D polymorphism of the tPA gene. In this study, Alu I allele carriers of the tPA gene showed better treatment response to mirtazapine compared to D/D homozygotes. This suggests that Alu I/D polymorphism affects the therapeutic action of mirtazapine in MDD and that the determination of the genotype on the tPA Alu I/D may be a potential genetic marker for the prediction of therapeutic response to mirtazapine treatment in MDD patients.

NO. 37

THE ROLE OF FILIAL PIETY IN MEDIATING RISK AND RECOVERY IN CHINESE WOMEN WITH A HISTORY OF SUICIDAL BEHAVIOR: A CROSS-CULTURAL QUALITATIVE STUDY

Lead Author: June Lam, M.D.

Co-Author(s): Juveria Zaheer, M.D., Samuel Law, M.D., Wes Shera, Ph.D., A. K. Tat Tsang, Ph.D., W. L. Alan Fung, M.D., Annette Zhang, M.D., Pozi Liu, M.D., Rahel Eynan, Ph.D., Paul S. Links, M.D.

SUMMARY:

Background: Filial piety involves the view that one's life is the continuation of one's parents' lives. Family harmony is prioritized over personal goals. Filial piety has been described as both a risk and a protective factor in depression and suicidal behavior. The dual filial piety model posits that differences exist between authoritarian filial piety, where children feel obligated to fulfill rigid role requirements, and reciprocal filial piety, where care for one's parents arises as a return for their parents' efforts in raising them. This study clarifies the role of filial piety in the risk and recovery experience of ChineseÂ–born Canadian women compared to Chinese women who have a history of suicidal behavior. **Methods:** In collaboration with Tsinghua University, a series of qualitative interviews were conducted with ChineseÂ–born Canadian women (n=10) and Chinese women (n=30) with a history of suicidal behavior within the past 12 months. Filial piety data were independently extracted from these interviews by coauthors. Any discrepancies in data collection were discussed and resolved. The data were analyzed using constructivist grounded theory. **Results:** Every woman in the ChineseÂ–Canadian sample described duty to parents and lack of agency in their family as a major source of distress, sacrificing their personal interests for those of their parents, especially in their academic and financial choices. Filial piety was also related to guilt after the death of a parent, believing they did not do enough after they immigrated. In the Chinese sample, filial piety had a mixed role in the risk and recovery experience. Some women described filial piety as a protective factor for suicidal behavior, as suicide would dishonor and disrespect their parents. Respondents describing filial piety as a protective factor for suicidal behavior tended to be from families with reciprocal filial piety. **Conclusion:** Filial piety has a nuanced role in the risk and recovery of ChineseÂ–Canadian and Chinese women with a history of suicidal behavior. While filial piety was largely a source of distress for the Chinese-Canadian women, many of the Chinese women describe filial piety as a protective factor for suicide. This difference may be partially mediated by the difference between reciprocal filial piety and authoritarian filial piety experienced by the respondents. The link between the dual filial piety model and suicidal behavior is not well studied and

may be a future area for investigation. Perhaps the immigrant experience, and the resulting social isolation and clash with Western cultural values, plays a role in mediating the effects of filial piety in Chinese-Canadian women. This study was supported by the Canadian Institutes of Health Research (CIHR) and National Natural Science Foundation of China (NSFC) research funding.

NO. 38

THE TREATMENT RATE OF FIVE-YEAR TENDENCY OF POSTPARTUM DEPRESSION IN KOREA: A NATIONAL HEALTH INSURANCE DATABASE STUDY

Lead Author: Soyoen Lee, M.D.
Co-Author(s): Kyung-Kyu Lee, Mi-Kyung Lee , Hong jin Joen, Kyung-Hoon Kim, Jeong-ho Seok, Dong-woo Lee, Jong-Woo Paik

SUMMARY:

Background: Although about 70–80% of women feel depressed mood and 10–15% of them experience postpartum depression, few statistics have been presented in a large-scale epidemiological study about pregnant women in Korea. In Korea, all medical records of insured patients are implemented and maintained as electronic and analyzed systematically to determine the size and patient care aspects. Tracking the prevalence changes through the analysis of several years of data, and understanding with respect to future disease trends, may be helpful to medical forecasting and maternal health care policy making. **Objective:** Estimate the treatment prevalence of postpartum depression. **Methods:** In this study, we analyzed the health insurance claims data of HIRA from January 1, 2010, to December 31, 2014. The subjects were women between 18 and 45 who were diagnosed with depression or postpartum depression within six months after birth. We estimated the treated prevalence and current status of postpartum depression in South Korea by analyzing data by year, age, mode of delivery and health care utilization. **Results:** The number and the ratio of postpartum depression patients compared to the overall maternity population has continuously increased as follows: 3,987 people(0.87%) in 2010, 4,366 people (0.95%) in 2011, 4,638 people (0.98%) in 2012, 4,069 people (0.96%) in 2013 and 3,000 people(0.78%) in 2014. Common treated prevalence of postpartum depression patients when viewing the prevalence of the disease in 10–15% is less than one percent. The incidence was much higher in Medicaid patients (2.89–5.48%) than national health insurance subscribers (0.75–0.95%). The treatment prevalence of postpartum depression is higher than in other women over 20 or under the mid-40s, which is consistent with known risk factors. **Conclusion:** Although the number and the ratio of postpartum depression patients compared to the overall maternity population have continuously increased, the treatment prevalence was extremely low. Our data suggest that the treatment rate of postpartum depression is low in South Korea. Therefore, further efforts to support and screen postpartum depression patients is warranted.

NO. 39

SLEEP QUALITY OF KOREAN WORKERS AND ITS ASSOCIATION WITH DEPRESSION AND ANXIETY

Lead Author: Woo Hyung Lee, M.D.
Co-Author(s): Chan-Hyun Jung, M.D., Jeong-Kyu Sakong, M.D., Ph.D., Se-Won Lim, M.D., Ph.D., Dong-Won Shin, M.D., Ph.D., Young-Chul Shin, M.D., Ph.D., Kang-Seob Oh, M.D., Ph.D.

SUMMARY:

Background: Insomnia, depression and anxiety are common symptoms workers often suffer, and some studies have reported associations between these symptoms. This study investigated the associations between these symptoms to understand which particular components of insomnia affect depression and anxiety and to quantify the degrees of insomnia, depression and anxiety felt by workers in general. **Methods:** 1,000 workers who had employee medical checkups from January 2014 to December 2014 in the Workplace Mental Health Institute of Kangbuk Samsung Medical Center were randomly selected. We analyzed the following self-reported measures: the Pittsburgh Sleep Quality Index (PSQI), Center for Epidemiologic Studies Depression scale (CES-D) and Beck Anxiety Inventory (BAI) scores. Good sleepers and poor sleepers were divided by a total PSQI score of 5, and the distributions of depression and anxiety indices were analyzed using the independent t-test and chi-square test. The association of PSQI total score and the seven component scores that make up the PSQI with the depression and anxiety indices were analyzed by univariate linear regression analysis. **Results:** Of 998 workers, the mean total PSQI score was 4.38±2.37, mean CES-D score was 10.05±5.85 and mean BAI score was 5.48±6.10. 742 (74.35%) workers had PSQI total scores below 5, and 256 (25.65%) had scores over 5. BAI and CES-D scores were generally lower in good sleepers than in poor sleepers. Univariate linear regression analysis

using the seven components of the PSQI versus BAI and CES-D scores revealed that coefficients for components 1 and 7 (subjective sleep quality and daytime dysfunction) were 0.612 and 0.582 and 3.196 and 2.853, respectively, which were higher than coefficients for the other components and the total scores. **Conclusion:** In Korean workers, good sleepers had significantly lower depression and anxiety index scores than poor sleepers. Among the components of insomnia studied, subjective sleep quality and daytime dysfunction were most strongly associated with depression and anxiety.

NO. 40

ALTERED RESTING STATE FUNCTIONAL CONNECTIVITY IN INTERNET GAMING DISORDER WITH CHILDHOOD ATTENTION-DEFICIT/HYPERACTIVITY DISORDER COMORBIDITY

Lead Author: Deokjong Lee, M.D.
Co-Author(s): Young-Chul Jung, M.D., Ph.D.

SUMMARY:

Background: Internet gaming disorder (IGD) is defined as excessive and compulsive Internet gaming behavior despite negative psychosocial consequences. High comorbidity of IGD and other mental disorders, especially with attention-deficit/hyperactivity disorder (ADHD), has been reported. IGD and ADHD have been found to share clinical characteristics that are associated with impaired cognitive control. However, the precise links between the two disorders remain unclear. Recently, studies have focused on the large-scale networks of different brain regions to understand cognitive function. In order to test our hypothesis that the default mode network's (DMN's) impaired organization and failed suppression would have detrimental effects on cognitive control, we compared the resting state functional connectivity in DMNs of young adults with IGD with or without childhood ADHD. **Methods:** Resting state functional magnetic resonance image data were obtained from 34 young male adults with IGD (IGD group; mean age=23.8±2.6) and 20 age-matched male healthy controls during a six-minute passive-viewing block scan. The IGD group consisted of 13 young male adults with childhood history of ADHD (IGD/ADHD+ group) and 21 young male adults without any evidence of childhood ADHD (IGD/ADHD− group). We selected the posterior cingulate cortex (PCC) as the region of interest and analyzed seed-based functional connectivity of the DMN. **Results:** The IGD group, compared to the healthy control group, demonstrated stronger PCC functional connectivity with the medial prefrontal cortex (mPFC), bilateral inferior parietal lobule (IPL) and frontal eye field (FEF). The IGD/ADHD+ group, compared to the IGD/ADHD− group, showed stronger PCC functional connectivity with the lateral rostral prefrontal cortex. **Conclusion:** Our results suggest that young male adults with IGD exhibit altered resting-state patterns of DMN activity. Participants with IGD demonstrated hyperconnectivity between the PCC and other DMN-related brain regions such as mPFC and IPL. They also showed abnormal connection between the PCC and FEF that is not related to the "default mode" of brain function. The medial rostral prefrontal cortex has been found to be connected to the PCC, while the lateral rostral prefrontal cortex has been proposed to co-activate with the dorsal anterior cingulate cortex, dorsolateral prefrontal cortex and lateral parietal cortex. Instead, in the IGD group with childhood ADHD, the lateral rostral prefrontal cortex showed a stronger functional connectivity with PCC. These resting-state functional connectivity findings point to disruption in the normal "default mode" of brain function in IGD with ADHD comorbidity. **Keywords:** Internet Gaming Disorder, Attention-Deficit/Hyperactivity Disorder, Default Mode Network, Rostral Prefrontal Cortex

NO. 41

KEY STAKEHOLDER PERCEPTIONS OF PSYCHOSOCIAL REHABILITATION IN HUNAN, CHINA: A QUALITATIVE STUDY OF COMMUNITY MENTAL HEALTH IMPLEMENTATION

Lead Author: Luming Li, M.D.
Co-Author(s): Mengjie Deng, Xuan Ouyang, Robert Rohrbaugh, Zhening Liu

SUMMARY:

Limited research is available to describe the process of implementation of mental health rehabilitation services internationally. In 2013, China passed comprehensive national mental health reform, mandating the expansion of prevention and psychosocial rehabilitation services for those with serious mental illness. This study documents the regional challenges of planning and implementing mental health rehabilitation services in Hunan, China. Hunan is a province with a population of 65 million. A review of the literature shows that the state of psychosocial rehabilitation services has not been studied systematically. We use a qualitative methodology to identify and assess mental health rehabilitation facilities within Hunan province. The

results in this qualitative case study will include findings from three focus groups, 23 semi-structured key informant interviews and participant observation. Participants were purposively selected and included diverse stakeholders such as rehabilitation directors, psychiatrists, psychologists, social workers and psychiatric hospital leaders. In total, eight hospitals, seven rehabilitation centers and three schools are represented in the study. Preliminary data suggest that important implementation challenges include four themes: inadequate marketing and education, resource shortage and barriers of care, stigma and cultural factors, and insufficient system integration. Rehabilitation center directors reported limited specialized training about rehabilitation, low employee incomes, lack of future direction and the need for additional financial investment in rehabilitation. Mental health hospital leaders discussed improvement of stakeholder communication, policy changes that outline specific rehabilitation requirements and the need for high-level government support. These findings will have strong implications for the future development of services in China and will also be useful for consideration in national policy changes.

NO. 42

DIFFERENTIAL STRESS REACTION BETWEEN ANXIETY AND DEPRESSIVE DISORDER

Lead Author: Eun Jung Li, M.D.
Co-Author(s): Doo-Heum Park, Jae-Hak Yu, Seung-Ho Ryu, Jee-Hyun Ha

SUMMARY:

This study was designed to assess the differential stress reaction between anxiety and depressive disorder patients by testing the change of heart rate variability(HRV) at resting, upright and psychological stress. HRV was measured at resting, upright and psychological stress in 40 anxiety disorder patients and 40 depressive disorder patients. We used the Visual Analogue Scale (VAS) score to assess tension and stress severity. The Beck Depression Inventory (BDI) and State Trait Anxiety Inventory–I and II (STAI-I and -II) were used to assess depression and anxiety severity. Differences between HRV indices were evaluated using independent t-test. Standard deviation of normal to normal intervals (SDNN), normalized low frequency (LFn) and ratio of low frequency to high frequency (LF/HF) were significantly increased, and normalized high frequency (HFn) was significantly decreased in upright position compared to resting state in the anxiety patients ($p<0.01$). SDNN and LFn were significantly increased, and HFn was significantly decreased in the depressive patients. LFn, HFn and LF/HF showed significant differences between the two groups in psychological stress only. There was no significant difference of the change of the HRV in physical stress status between anxiety disorder and depressive disorder. LF/HF and LFn were significantly increased after psychological stress in anxiety disorder, but did not show significant difference in depressive disorder. Significant differences of LFn and LF/HF in psychological stress may suggest that anxiety disorder patients are more fragile in their psychological stress compared to depressive disorder patients.

NO. 43

ALTERATION OF OLFACTORY IDENTIFICATION AND COGNITIVE FUNCTION AFTER CHEMOTHERAPY IN PATIENTS WITH BREAST CANCER

Lead Author: Jongseok Lim
Co-Author(s): Soohyun Joe, Su-jin Koh, Joonho Ahn

SUMMARY:

Background: Cognitive impairment is frequently observed among breast cancer patients following chemotherapy. Reports have suggested that olfactory detection and identification are closely related to cognitive impairment and have value as sensitive predictors in the early stages of degenerative change. This study evaluated the value of an olfactory identification performance test as a predictor of cognitive decline in patients treated with chemotherapy. It also evaluated the relationship between olfactory identification and cognitive impairment following chemotherapy by comparing cognitive function and olfactory identification performance before and after chemotherapy. **Methods:** A total of 18 breast cancer patients treated with chemotherapy were included in this study. Before undergoing chemotherapy, the patients were evaluated for mental status, cognitive function and olfactory identification performance. Mental status was assessed using the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). Cognitive function was assessed using a verbal fluency test, the Korean version of the Boston Naming Test (K-BNT), a word list memory task, a digit-span task, a modified Stroop test, a trail-making test, the Rey Complex Figure Test (RCFT), and a part of the Korean version of Wechsler Adult Intelligence Scale (K-WAIS). Olfactory identification

performance was assessed using the Brief Smell Identification Test (BSIT). Within three weeks following the patients' last chemotherapy treatment, the same assessments were repeated. Paired t-tests were used to examine the differences in scores before and after chemotherapy treatment. **Results:** After chemotherapy, word list delayed recall (p=0.01), word list recognition (p=0.02), trail making A (p=0.03) and partial K-WAIS (p=0.02) scores showed significant improvement. Average response time for whole word (p=0.008) and color discordant words (p=0.002) in the modified Stroop test were significantly shortened, suggesting that there was learning effect and intact cognitive function in those areas. From baseline to post-chemotherapy assessment, no statistically significant differences were found in the scores on the verbal fluency test, K-BNT, digit-span task, RCFT or BSIT, suggesting that the learning effect was absent in those tests. **Conclusion:** The learning effect in language, attention, visuospatial ability and olfactory identification was impaired, but executive function and processing speed were relatively intact after chemotherapy in patients with breast cancer. These results suggest that the prefrontal cortex, which is related to executive function and processing speed, may be less sensitive to chemotherapy than other brain regions. Due to the lack of a control group in this study, caution should be exercised in interpreting these findings, and therefore, additional case-control studies are warranted.

NO. 44

KNOWLEDGE OF AND ATTITUDES TOWARD ALCOHOLISM AMONG CHURCH LEADERS IN SAINT VINCENT AND THE GRENADINES

Lead Author: Shiyuan Liu, B.A.
Co-Author(s): Maryam Zafer, Ynolde Smart, Karen Providence, M.D., Craig L. Katz, M.D.

SUMMARY:

Background: Since 2012, the Arnhold Global Health Institute at Icahn School of Medicine at Mount Sinai, in conjunction with the Saint Vincent/Grenadines (SVG) Ministry of Health and the Environment, has been exploring and addressing alcoholism in SVG, a country considered to have a strong "rum culture." This has included piloting alcohol self-help groups and using the community-based participatory method known as Photovoice to qualitatively investigate personal experiences with alcoholism among self-help group members. **Objective:** Our project followed up with past efforts by organizing an exhibit of Photovoice photos and narratives. In addition, building on findings from Photovoice interviews, we sought to gauge attitudes toward and knowledge of alcoholism among church leaders in SVG in order to investigate their potential role in future alcohol harm reduction programs. Our hypothesis was that churches will vary depending on denomination and location in their attitudes toward alcoholism and their willingness to intervene in alcohol problems. **Methods:** We gathered data through one-on-one interviews with church leaders in three towns: Barrouallie, the site of our longest-running alcohol self-help group; Kingstown, the capital; and Calliaqua, at the suggestion of our collaborators in SVG. Transcripts from interviews were qualitatively coded for themes relevant to the topic of alcoholism in SVG, and final themes were reached via consensus among the investigators. **Results:** Analysis revealed that the churches are divided on their views on drinking. On the other hand, clergy across denominations overwhelmingly tended to believe that drinking tends to be a problem only for people outside the church, especially the youth and the poor. Clergy were aware of many reasons that people drink and that harmful effects of drinking span many aspects of people's lives. Almost all clergy deemed alcohol a major problem and believed the church has unique strengths it can leverage to address alcohol problems via a collaborative effort. Church leaders felt that the government should take initiative in addressing the alcohol issue, especially through employment programs. **Conclusion:** Given SVG church leaders' consistent concern about drinking problems in their communities and their commitment to community outreach, Saint Vincentian churches provide an abundant and energetic resource for addressing alcoholism in SVG. However, their impact may be hampered by their view that drinking problems are only "other people's" problems and non-church members' possible reluctance to seek help from churches.

NO. 45

A TALE OF KRAEPELIN AND KETAMINE: USING HISTORIC DIAGNOSTICS AND EXPERIMENTAL THERAPY TO REACH THE MOST ILL

Lead Author: Kelly MacDonald, M.D.
Co-Author(s): David Williamson, M.D., Bryan Pelka, M.D.

SUMMARY:

Background: Emil Kraepelin, founder of modern psychiatry, used careful longitudinal observations of psychiatric patients to classify psychosis. His classic descriptions of bipolar disorder may help identify patients too ill to meet *DSM* criteria requiring subjective responses in a patient interview. The initial excitement surrounding the rapid and robust antidepressant effects of the NMDA receptor antagonist ketamine has been tempered by data showing that its benefits are transient. Despite ketamine's disappointing results for sustained remission of depression, its quick onset of action and efficacy in treatment-resistant depression may prove useful. In this case, we discuss the diagnosis and management of a patient with severe bipolar disorder. **Case:** The patient is a 35-year-old disabled male with bipolar disorder, epilepsy and type 1 diabetes mellitus (DM) presenting with cognitive and functional decline after a complicated three-month hospitalization in Puerto Rico for diabetic ketoacidosis. After extensive encephalitis workup proved unremarkable, his deficits were concluded to be a result of neurological injury from uncontrolled DM and seizures superimposed on baseline cognitive impairment. Psychiatry was consulted for long-term care placement. Given the patient's presumed brain injury, the case was discussed with neuropsychiatry, who found the patient's neurologic exam benign and observed a striking similarity between the patient and Kraepelin's description of severe bipolar depression presenting as an "impediment of volition." Upon arrival to the traumatic brain injury ward, the patient displayed significant neurovegetative symptoms, often lying in the fetal position in his own urine. He was remarkably avolitional and nearly mute, but would respond with one or two words when persistently engaged. **Discussion:** We suspected an affective disorder, and history-gathering revealed a strong family and personal history of mood disorders and suicidality. We also discovered the patient was previously a successful university student; he was disabled based only on epilepsy and bipolar disorder. Furthermore, his functional decline preceded his hospitalization and was precipitated by psychosocial stressors. We began empiric treatment with antidepressant polypharmacy and behavioral interventions. As the patient's neurovegetative symptoms slowly improved, he remained regressed, negativistic and defiant, with occasional violence. Given his long history of intractable depression, the severity of his disease and residual diagnostic uncertainty, we attempted to induce a stronger treatment response with an IV infusion of low-dose ketamine. Afterward, the patient's HDRS, MADRS, BDI, and MMSE, improved. His affect brightened, and he became more engaged and cooperative. This confirmed our working diagnosis of affective disorder, allowed him to re-establish an emotional connection with family and provided an opening for staff to build a therapeutic alliance.

NO. 46

INNOVATION IN THE AGE OF HEALTH CARE REFORM: IMPLEMENTING A "BEHAVIORAL VACCINE" TO PREVENT ADOLESCENT DEPRESSION

Lead Author: Nicholas Mahoney, D.O.

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SUMMARY:

Background: Technology-based behavioral vaccines offer a low cost, mass distribution and highly feasible model to prevent mental health disorders. As many as 20% of adolescents suffer a major depressive episode by 18, and considering its association with extensive social problems and physical morbidity, depression is one of the most prevalent chronic diseases to prevent. However, a series of external and internal barriers exist within the health care system, which inhibits the implementation of new prevention protocols. **Objective:** To better understand the impact of these barriers on mental health screening and treatment, we conducted a mixed methods study of the implementation of a multisite (n=21), phase 3 randomized clinical trial of an Internet-based depression prevention intervention program ("CATCH-IT"). **Methods:** We examined the impact of internal and external barriers to the screening and enrollment process by using "REACH" (proportion of at-risk patients identified through screening or enrolled). External barriers and internal barriers are defined and their impact on REACH calculated. A narrative analysis was conducted to better understand the influence of these barriers on implementation. **Results:** Over a 28-month potential recruitment period, the clinics achieved a mean REACH Screening of 0.209 and REACH enrollment of 0.174. External barriers

accounted for a REACH loss of 0.133, with an additional 0.394 lost to internal barriers. Three themes were identified from the narratives: the challenges primary care clinics currently face when delivering preventive medicine, the influence of relationships in helping overcome these challenges and the impact of motivation in maintaining active adherence in the intervention. **Conclusion:** Technology-based models to prevent mental disorders offer considerable promise but may be subject to degradation of public health impact related to external and internal barriers. Use of relational communication strategies plays a necessary role for successful implementation. As health care systems focus on preventive medicine, these systems need to encourage the early intervention approaches they claim to promote.

NO. 47

NIH TOOLBOX FLANKER INHIBITORY CONTROL AND ATTENTION TEST SCORES ARE NEGATIVELY CORRELATED WITH PLASMA LEVELS OF IL-1Î² IN PATIENTS WITH SCHIZOPHRENIA

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Co-Author(s): Ruchir Arvind Patel, Ramandeep S. Kahlon, Satyajit Mohite, Sumana Goddu, Osarhiemen Aimienwanu, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:
Aberrant inhibitory (impulse) control has been associated with psychotic disorders and can manifest as aggression and fatal and nonfatal self-injurious behavior. The NIH Toolbox Flanker Inhibitory Control and Attention Test (Flanker Task) is a validated measure of attention and inhibitory control. Inhibitory control (response inhibition) is a Research Domain Criteria (RDoC) construct of cognitive control. Although plasma inflammatory markers have been correlated with poorer cognition in patients with schizophrenia, the association of these inflammatory markers with inhibitory control has not been evaluated. We therefore examined the association of plasma inflammatory markers with scores on the Flanker Task in individuals with schizophrenia. Ten patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) completed the Flanker Task a few hours after having fasting blood drawn for evaluation of plasma inflammatory cytokines (interferon gamma [IFN-Î³], interleukin 1 beta [IL-1β], interleukin 6 [IL-6] and tumor necrosis factor alpha [TNF-α]). Cytokines were measured using ELISA. We calculated Spearman rank correlations between scores on the Flanker task and plasma cytokines. Results showed that Flanker inhibitory control was negatively correlated with IL-1β (ρ=−0.70, p=0.036), but was not correlated with the other cytokines. In conclusion, the results of our pilot study suggest that IL-1β could be a biomarker of abnormal impulse control in schizophrenia and therefore should be further evaluated as a potential target for treatment interventions consistent with the tenets of personalized medicine.

NO. 48

PUTTING THE PEP IN CPEP: A LECTURE SERIES DESIGNED TO ORIENT RESIDENTS TO THE PSYCHIATRIC EMERGENCY ROOM

Lead Author: Megan McLeod, M.D.
Co-Author(s): Joshua Russell, M.D., Lovejit Kaur, M.D., Victoria Brooks, M.D.

SUMMARY:
Background: Emergency psychiatry is a core area of psychiatric residency training programs. Residents also play an important role in the functioning of a psychiatric emergency room. They are expected to perform diagnostic interviews, contact collateral, formulate treatment plans and manage agitated patients. Another key component of training is learning to handle emergencies on inpatient psychiatric units. Emergency psychiatry can be complex and overwhelming for new residents. In past years, residents have felt apprehensive and uncomfortable about their role when beginning to work in the psychiatric emergency room. A lecture series was thus created to 1) Improve residents' comfort level when in the Comprehensive Psychiatric Emergency Program (CPEP) and handling emergencies on the inpatient unit and 2) Improve residents' knowledge of their duties in CPEP. Specific goals for improvement were chosen using the Education Committee of the American Association for Emergency Psychiatry training goals for residents. This study was conducted at Erie County Medical Center, an affiliate of the University at Buffalo psychiatric residency training program. **Methods:** Participants were first-year psychiatric residents. They were given a three-part lecture series. Lecture one was an overview of CPEP and emergency inpatient duties. Lecture two focused on approaches for specific patient populations. Lecture three involved interactive case discussions. A nine-point Likert scale was used to assess comfort, and a multiple-choice test was used to assess knowledge.

Both were given immediately before and after the lecture series and will be given again one month after the lecture series. Data will be analyzed using independent t-tests. **Results:** Preliminary data show that the lecture series effectively increased the comfort level of the participants' understanding of their role in CPEP and in handling emergencies on inpatient unit. The lectures were also effective at increasing participants' knowledge of their duties in CPEP and on the inpatient unit. Further study is needed to determine if the results are persistent over time and if resident knowledge and comfort translate into improved patient outcomes.

NO. 49

IMPACT OF ANTI-INFLAMMATORY DRUGS ON RISK OF DEPRESSION AFTER INTENSIVE CARE REQUIRING MECHANICAL VENTILATION

Lead Author: Clara Reece Medici, B.S.
Co-Author(s): Søren Dinesen Østergaard, Henrik Toft Sørensen, Christian Fynbo Christiansen

SUMMARY:

Background: Critical illness requiring mechanical ventilation increases the risk of subsequent mental illness, including depression. As critically ill patients exhibit high levels of inflammation and inflammation plays a role in mental illness, critical and mental illnesses may be linked by systemic inflammation. **Objective:** Examine the impact of preadmission use of nonsteroidal anti-inflammatory drugs (NSAIDs), glucocorticoids, statins or a combination of these drugs on risk of depression after intensive care requiring mechanical ventilation. **Methods:** This nationwide, registry-based cohort study includes all patients who received mechanical ventilation in Danish intensive care units during 2005–2013. Preadmission use of NSAIDs, glucocorticoids, statins or combinations of these drugs will be identified from filled prescriptions. After propensity score matching, risk of depression (diagnoses of depression and/or prescriptions for antidepressants) in users and nonusers of these anti-inflammatory drugs will be estimated using the cumulative incidence method, accounting for death as a competing risk. Risk in users and nonusers will be compared using hazard ratios from a Cox regression model adjusted for potential confounding factors (age, sex, Charlson Comorbidity Index score, educational level, gross income, job level and length of admission). **Results:** Not yet available. The estimated number of patients is 100,000. Expected preadmission use is 14% for statins, 15% for NSAIDs, and 10% for glucocorticoids. **Conclusion:** Not yet available. We expect that this study will provide new knowledge about mechanisms linking critical and mental illnesses. If risk of depression is reduced by use of anti-inflammatory drugs, this finding may guide future clinical trials.

NO. 50

ANALYSIS OF 30-DAY READMISSIONS IN THE CONTEXT OF AN ATYPICAL PSYCHIATRIC PRESENTATION

Lead Author: Sahil Munjal, M.D.
Co-Author(s): Sean Allan, M.D., Ami Baxi, M.D., Silky Singh, M.D., Ruth Shim, M.D.

SUMMARY:

In an attempt to increase quality and decrease health care costs, the Affordable Care Act (ACA) has led the Centers for Medicare and Medicaid Services (CMS) to address and improve 30-day readmission rates in psychiatric hospitals. Multiple readmissions may be the result of poor quality care or poor community health services, but they could also signal a need for increased diagnostic accuracy, particularly as it relates to possible medical illnesses with psychiatric symptoms. This case highlights the diagnostic challenges encountered in a 24-year-old female with no prior psychiatric history and multiple psychiatric hospital readmissions (four admissions in three months). Details of her course were obtained from diagnostic assessments and observation, interviews with the patient and family, consultation with neurology, and review of medical records. The patient was initially admitted after an acute onset of manic and psychiatric symptoms. Differential diagnosis was narrowed to presumed bipolar disorder with psychotic features. She was readmitted 18 days after initial discharge with new symptoms of depression and catatonia. She continued to have two subsequent admissions for increasing social withdrawal and mutism. The patient's symptoms did not respond to treatment with several medications or electroconvulsive therapy (ECT). Although early in the hospital course her head CT was normal, her atypical presentation of rapidly changing symptoms, treatment-resistant symptoms and multiple hospital readmissions prompted a neurology consult for further imaging. A brain MRI showed multiple hypodensities with progression to additional lesions on repeat scans. Combined with her clinical presentation, neurology suggested a diagnosis of multiple sclerosis versus acute disseminated encephalomyelitis (ADEM). The

patient was treated with a course of steroid infusions and did not present for further psychiatric hospitalizations. Psychiatrists must remember that many medical and neurological disorders can initially manifest with psychiatric symptoms. Thus, multiple psychiatric admissions accompanied by an atypical symptom presentation and course should trigger the need to more closely examine all possible causes of illness. Collaboration and consultation with neurology and medicine is essential to diagnosing and effectively treating difficult cases. Therefore, in working to reduce multiple psychiatric admissions, and ultimately, to improve the quality of patient care outcomes, psychiatrists should consider an expansive differential diagnosis and work closely with other physicians and providers.

NO. 51

CURRENT TRENDS AND ATTITUDES OF RESIDENTS TOWARD PERSONAL PSYCHOTHERAPY DURING RESIDENCY TRAINING

Lead Author: Sahil Munjal, M.D.
Co-Author(s): Alexander Lerman, M.D.

SUMMARY:

In residency, personal psychotherapy is considered an important part of psychiatric and psychotherapy training. Beginning psychiatrists are still drawn to our specialty by desire and curiosity to understand more about themselves and the people around them, and personal psychotherapy does play a role in that. Many U.S. residency training directors agree upon the importance of psychotherapy as a general educational tool for teaching residents about therapeutic technique and managing their emotional reactions toward patients. It is useful for residents coping with premorbid psychopathology and for dealing with the stresses of training in psychiatry. Despite the importance with which training directors view personal psychotherapy, the number of psychiatric residents in personal psychotherapy has decreased over the last several decades. We wanted to survey our residency program to evaluate current trends and attitudes in personal psychotherapy among psychiatric residents. Although there have been studies looking at residents from pooled multiple national residency programs, no study has been done so far to look at a program individually. In order to do this, we surveyed residents about their reasons for participation in personal psychotherapy, including type of therapy, perceived value of therapy and barriers to pursuing therapy. We also compared the interest in various psychiatric treatments among residents engaged and not engaged in personal psychotherapy. We designed and emailed a brief, voluntary, anonymous survey to be completed on www.SurveyMonkey.com. Of the residents who filled out the survey, 46% were engaged in personal psychotherapy. Comparing our results to similar surveys done in other pooled national residency programs indicated that a higher proportion of our residents seek personal psychotherapy. Also, residents in personal psychotherapy reported a higher level of satisfaction in their training of psychodynamic psychotherapy and other behavioral therapies. The reasons cited by the residents to choose personal psychotherapy included self-awareness (92%), personal stress (75%) and for training purpose only (42%). Most of the residents (75%) were reimbursed more than 80% of their out of pocket expense, which is a big consideration in continuing with personal psychotherapy. Residents who were not engaged in personal psychotherapy reported lack of time (62.4%) as a significant/critical factor. Other stated reasons were a lack of interest (28.5%) and the cost (28.5%). The residents in personal psychotherapy rated highly their interest in psychodynamic psychotherapy (92%) versus residents not in personal psychotherapy (64.2%). Similarly, interest in CBT/DBT was rated 83.3% vs. 57.1%, and family/couples therapy was 75% vs. 43%. This suggests that residents in personal psychotherapy have a much higher interest in various modalities of psychotherapy, most significantly psychodynamic psychotherapy.

NO. 52

UTILIZATION OF CRISIS HELPLINES AS A COPING TOOL: A CASE REPORT

Lead Author: Insiya Nasrulla, M.B.B.S.
Co-Author(s): Maria Bodic, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: The use of emergency departments (ED) for routine care strains the health system by increasing costs, raising pressures to admit patients and reducing the ED's capacity to care for true emergencies. Persons with mental health disorders account for a significant number of ED visits in the United States. Patients with intellectual disabilities tend to have poor coping skills, requiring additional emergency interventions to manage behavioral problems. We present a case illustrating a 28-year-old male with mild intellectual disability and paranoid schizophrenia, frequenting Maimonides

Medical Center (MMC) ED and other area hospitals, mostly due to outbursts triggered by family conflicts. Initially he would call his outpatient provider, but due to after hours unavailability, he was given access to our 24/7 telephone helpline. He began using this resource as a means to communicate with mental health professionals multiple times a day when he felt irritable or bored, which placed an additional burden on the staff. **Methods:** Medical records were obtained from MMC ED and Coney Island Hospital. The patient, his family members and MMC ED staff were interviewed. A literature review was conducted using the keywords "mental health," "phone crisis intervention," "phone line crisis," "frequent callers" and "intellectual disability." We also reviewed our crisis calls log book for similar cases. **Results:** Studies have explored the characteristics of frequent callers to crisis helplines and staff attitudes toward callers; however, data is limited and of highly variable quality. Callers reportedly have a poorer clinical profile, including a higher suicide risk, than people who do not use telephone counseling. Although our search revealed several reports on the benefits of phone crisis lines, as well as the difficulties involved in managing frequent callers, there were no studies examining the use of such helplines by persons with intellectual disabilities. In the case of our patient, followed for the last four years, data show that on average he made eight calls a day in 2014 and 2015, with bouts of up to 30 calls in a row during periods of high distress. This volume of telephone help potentially translated to a significant decrease (two-thirds) in his ED visits for behavioral outbursts. The patient and his family regard this as a substantial improvement in his coping skills, while most providers saw it as an increase in their workload and at times reported feeling burned out. **Conclusion:** Intellectually disabled patients tend to be high utilizers of emergency services due to their clinical characteristics and increased barriers to accessing services. Continued efforts are needed in addressing these patterns and identifying support systems to help patients cope on a routine basis without exploitation of limited ED resources. This case brings to light the positive impact of using crisis helplines as an accessible resource for mental health patients.

NO. 53

USE OF INVOLUNTARY MEDICATION, SECLUSION AND RESTRAINT IN A STATE PSYCHIATRIC HOSPITAL

Lead Author: Malini Neramballi, M.D.

Co-Author(s): B. Abazyan, M.D., N. Kumar, M.D., F. Mohyuddin, M.D.

SUMMARY:

Background: Involuntary medication in psychiatric treatment of inpatients is highly controversial. Coercive treatments are widely used in daily practice within inpatient psychiatric facilities. There is a common belief that these procedures signal a failure in care. Our hospital has a specific routine documentation of legal status and application of involuntary medication in the patients' electronic records, which allows assessment of the frequency of involuntary medication. **Methods:** We reviewed patients' records collected from on-call logs between January 2014 and January 2015 and reviewed electronic medical records. For the year 2014–2015, we extracted aggregated data from the electronic database on age, sex, psychiatric diagnosis, legal status during admission, kind of coercive measure (mechanical restraint, seclusion and involuntary medication) applied, and the number and duration of seclusion and restraint episodes. **Results:** We identified 125 patients who required emergency psychiatric intervention during the study period. Of these, 77 patients (61%) were male. The age range of the patients was 19–71. At least one coercive measure was applied on 98 patients (78%). Coercive treatment was required more often in young males aged between 19 and 30. Seclusion was applied in 11(8%), out of which 64% were female. Mechanical restraint was applied in four patients (3%) out of the total population, all of whom were male. The most commonly used medication was a first-generation antipsychotic with antihistamine followed by atypical antipsychotics, antihistamine and/or benzodiazepine. Medication choice was made based on whether or not the patient responded to same medication in the past. The single most common reason for use of coercive measures was patient aggression toward others. The most common diagnosis was schizophrenia, followed by schizoaffective disorder and bipolar disorder with manic episode. **Conclusion:** Involuntary medication is applied more frequently than seclusion or mechanical restraint. Younger males with psychotic disorders are more likely to receive involuntary medication as the treatment option. Seclusion was applied most often in female patients. Only 28 patients (22%) responded to counseling needing no coercive treatment. The most commonly used medication was a first-generation antipsychotic with antihistamine, followed by atypical antipsychotic, although choice of medication was based on the

patient's history of prior response to similar medication.

NO. 54

EVALUATION OF RISK FACTORS FOR ANTIPSYCHOTIC POLYPHARMACY IN PATIENTS ADMITTED TO PSYCHIATRIC UNITS: A RETROSPECTIVE ANALYSIS

Lead Author: Shreedhar Paudel, M.D., M.P.H.
Co-Author(s): Sushrusha Arjyal, M.D., Louis Gainer, Liliana Markovic, M.D.

SUMMARY:

Background: Antipsychotic polypharmacy (APP) has been consistently found to be common practice while treating severe mental illness, even though the evidence for the benefits or efficacy of APP over antipsychotic monotherapy is controversial. Similarly, studies have shown that APP has the potential for more side effects, added cost and problems with patient safety. Some of the known important risk factors for APP are diagnosis of schizophrenia and severity of illness. In this context, we wanted to analyze the risk factors for APP at our inpatient psychiatry units. **Methods:** This is a retrospective analysis comparing risk factors for patients on APP in inpatient psychiatry units. The quality control division of Berkshire Medical Center provided the record of patients discharged on antipsychotic medications from its adult psychiatric units from October 2012 to December 2014. Out of 1,047 cases discharged on antipsychotic medications, only 82 patients were actually on APP at the time of admission, and this group was identified as the APP group. We randomly selected 72 patients for the non-APP group, who were only on one antipsychotic medication. We reviewed the electronic medical record of the selected patients starting two years prior to the admission date, focusing mainly on psychiatric diagnosis, history of violence/jail time, substance abuse and number of psychiatric emergency department (ED) visits and psychiatric admissions. The findings were analyzed quantitatively using standard statistical tools. The study was part of a quality improvement project for the hospital. **Results:** Odds ratio (OR) of receiving treatment with APP compared to non-APP was 7.0 for paranoid schizophrenia, 4.3 for schizoaffective disorder, 3.0 for schizophrenia, 0.7 for bipolar disorder, 0.6 for PTSD and 0.4 for major depressive disorder (MDD), but the results were statistically significant only for schizoaffective disorder and MDD. OR of treatment with APP for patients with three or more psychiatric admissions over the last two years was 3.2 ($p \leq 0.05$), and OR for three or more psychiatric ED visits in the last two years was 2.8 ($p \leq 0.05$). Similarly, ORs of APP for history of violence and history of substance abuse were 1.3 and 0.7, respectively. We also looked for OR for receiving treatment with APP for abnormal lipid profile (0.3), overweight (1.5), obesity (1.7), history of diabetes (0.7) and female gender (1.2), but none of these were statistically significant. **Conclusion:** Patients with a diagnosis of schizoaffective disorder and those with history of three or more psychiatric ED visits or three or more psychiatric hospitalizations within a two-year period are likely to receive treatment with APP. Other important risk factors for receiving treatment with APP are history of violence, high BMI, diagnosis of schizophrenia and paranoid schizophrenia. Prospective studies and randomized controlled trials will be important to provide better insight into casual relationships.

NO. 55

METRICS OF CARE RECEIVED BY CATATONIC PATIENTS AT DUKE UNIVERSITY HOSPITAL

Lead Author: Gopalkumar Rakesh, M.D.
Co-Author(s): Zainab Malik, M.D., Xavier Preud'Homme, M.D., Jane P. Gagliardi, M.D., Richard Weiner, M.D., Ph.D.

SUMMARY:

Background: Catatonia is a motor syndrome characterized by a constellation of symptoms, first described by Kahlbaum in 1874. Studies have shown a 70–90% response rate to benzodiazepines for symptoms in acute retarded catatonia. A certain subset of catatonic patients show an initial response to benzodiazepine administration and need prolonged benzodiazepine administration or electroconvulsive therapy (ECT) for sustained remission of symptoms. The limited literature available on treatment in catatonia posits these patients as requiring bilateral ECT and greater mean number of ECT treatments (at least 10) than patients without catatonic symptoms for remission of symptoms. There is sparse literature on the use of rating scales in catatonia. There is limited literature on being able to predict course and prognosis from the initial presentation, but this has never been replicated and so is open to speculation. Given the fact that there is limited literature available on a syndrome so old, we set out to do a retrospective chart review encompassing patients who have presented with catatonia at our hospital. This project

aims at both cross-sectional exploration of illness and treatment details as well as improvement of quality of care prospectively. **Methods:** Using queries in EPIC Maestro, we gathered records of patients admitted at Duke University Medical Center with catatonia from September 1, 2014 to August 30, 2015. Following this we gathered details including demographics, illness, treatment (both pharmacology and ECT), course and outcome of treatment. Two raters reviewed charts to determine retrospective CGI scores at baseline and CGI scores following every ECT. **Results:** A total of 36 patients were admitted with catatonia during this time period. Of these, eight were eventually diagnosed with autoimmune encephalitis. Four received a diagnosis of organic catatonia, and 22 had catatonic symptoms on initial presentation. The mean patient age was 52. Lorazepam was the most commonly used benzodiazepine, and the average dose was 5mg. Other medications were memantine, zolpidem and amantadine. There was no uniformity in practice on the use of these medications. Six of these patients had a rating scale done consistently (the Bush Francis Catatonia Rating Scale). All patients were diagnosed with catatonia using *DSM-5* criteria (at least three of the 12 symptoms). Nine patients received ECT, and all of them received bilateral ECT. **Conclusion:** These metrics show that there was a uniform method in diagnosing catatonia, but no clear protocol or uniformity in determining severity or response to treatment, as only a small proportion had a rating scale done. Knowing about loci for care of catatonic patients advocates for uniformity in practice and education on the same. This also calls to see how prospective interventions such as an order set with sequential ordering of lorazepam, other medications and ECT would benefit these patients.

NO. 56

HEALTH CARE UTILIZATION IN AN ELDERLY PATIENT WITH SOMATIC SYMPTOM DISORDER

Lead Author: Matthew Richter, M.D.
Co-Author(s): Shannon Ford, M.D.

SUMMARY:

Background: Somatization disorders cost the United States an estimated $256 billion each year. Patients with somatization symptoms utilize approximately twice the number of outpatient and inpatient visits, with a corresponding increase in health care costs every year. Furthermore, these visits are disproportionately skewed away from mental health services, placing an increasing load on the remainder of the health care system. This burden is further compounded by the fact that somatization often co-occurs with organic medical diagnoses, and all symptoms need to be evaluated and addressed. This case presentation explores the conflict between hospital resource overutilization and the long-term health of an elderly patient with somatic symptom disorder and multiple medical comorbidities. **Case:** Mr. D is an 81-year-old male of Caucasian descent who is a veteran of the Vietnam War. He currently resides in the independent living section of a retirement community. He has presented to his local emergency department a documented 20 times in the past two months for similar complaints of alternating hard or loose stools and physical pain in his abdomen, chest and left shoulder. The emergency room has performed a basic medical workup on this patient with every visit, to include imaging, and has ultimately treated Mr. D with supportive measures, since multiple hospitalizations have failed to provide lasting resolution of symptoms. The emergency department will occasionally consult psychiatry, who have attempted to manage this patient by scheduling frequent, weekly visits at the clinic in his retirement community. Progressive muscle relaxation was also introduced as a way for Mr. D to learn self-mastery over his pain symptoms and anxiety. This therapy has been extraordinarily effective for the patient's immediate pain concerns and has allowed him to enter such a relaxed state that he begins to sleep. Despite these treatments, Mr. D has continued to pursue regular emergency room visits for somatic complaints, leading to frustration from the ER staff and communicating to him that he is a persona non grata. **Discussion:** Somatization disorder is an expensive condition that is estimated to affect anywhere from 0.1–16.1% of the general population. Few studies have included an elderly population. Although the *DSM-5* carefully points out that "the presence of somatic symptoms of an established medical disorder (e.g., diabetes or heart disease) does not exclude the diagnosis of somatic symptom disorder if the criteria are otherwise met," it can be difficult to delineate between the behavioral and medical components of disease. With these difficulties, an elderly adult presenting with a somatoform spectrum disorder can cost a medical system an enormous amount of time and resources to manage. This problem may continue to multiply as the American population increases in age and warrants further study.

NO. 57

ALCOHOLISM AND LEGAL IMPLICATIONS

Lead Author: María Robles Martínez

SUMMARY:

Background: Alcohol dependence is currently a big problem in our society; alcohol remains a major cause of deliberate acts of violence against self or others, and it is also one of the leading causes of unintentional injuries such as traffic accidents, drowning, burns and poisoning. In 2013, 65% of automobile convictions in Spain were due to driving under the influence of alcohol. We present an illustrative case report. **Case:** A 32-year-old male patient, unmarried and childless, lives with his mother and has no somatic or psychiatric medical history. Has been visiting an addiction treatment center since age 30, when he first arrived with alcohol and cannabis dependence, with occasional use of inhaled cocaine. This first visit was prompted by the patient losing his driving license after surpassing the permitted blood alcohol limit. The patient has a long criminal record for robbery with violence and intimidation, contempt for authority, reckless driving and possession of illegal substances; all these offenses always take place under the influence of alcohol, so that the patient remains without crime during periods of good adherence to treatment and monitoring. During evolution, he has been given a course of treatment with disulfiram 250mg orally, with frequent dropouts unilaterally, so now he rejects and has established a treatment with selincro 18mg/d and has maintained abstinence for five months, during which time, there have been no crimes and an improvement in his physical condition. **Conclusion:** Pharmacotherapy of alcoholism relapse prevention started 60 years ago. Clinical trials on the treatment of alcoholism, drug antagonist of opioid receptors, have provided a new criterion for looser relapse and have proven useful in reducing excessive drinking. Nalmefene helps the alcoholic patient significantly reduce alcohol consumption, avoiding risky situations arising therefrom and leading to a clinical remission and the disappearance of the negative consequences of excessive alcohol consumption. Nalmefene is the first available drug approved in the EU to reduce the consumption of alcohol in dependent patients.

NO. 58

EMOTIONAL FLEXIBILITY AND POST-TRAUMATIC STRESS DISORDER AMONG COMBAT VETERANS

Lead Author: Rebecca Rodin, M.Sc.

Co-Author(s): Adam Brown, Ph.D., George Bonanno, Ph.D., Nadia Rahman, B.A., Nicole Kouri, B.A., Maren Westphal, Ph.D., Isaac Galatzer-Levy, Ph.D., Richard Bryant, Ph.D., Charles Marmar, M.D.

SUMMARY:

Background: A growing body of evidence suggests that flexibility in the expression and suppression of emotions following exposure to traumatic events supports successful adaptation. This was demonstrated in New York City university students exposed to the September 11th terrorist attacks and in bereaved adults who recently lost a spouse. However, the protective effect of emotional flexibility has yet to be examined among individuals exposed to combat trauma and in the context of post-traumatic stress disorder (PTSD). This study tests if lower levels of emotional flexibility are associated with PTSD in combat-exposed veterans. **Methods:** Sixty Operation Enduring Freedom and Operation Iraqi Freedom combat veteran with and without PTSD were recruited to participate in this study. Participants completed a battery of self-report measures assessing symptoms of depression, PTSD and combat exposure. In addition, participants completed an emotional flexibility task in which they were asked to either enhance or suppress their expressions of emotion while viewing emotional pictures on a computer screen. Blind observers rated the expressiveness of the participants in response to the affective stimuli. **Results:** Repeated measures ANOVAs showed that both PTSD and depression were associated with lower levels of emotional enhancement ability. In addition, a series of linear regressions demonstrated that both combat exposure and lower levels of emotional enhancement ability predicted PTSD and depression symptom severity. The ability to suppress emotional responses did not differ among individuals with and without PTSD or depression. **Conclusion:** Deficits in emotional flexibility, particularly related to the ability to enhance emotional expression, significantly predict increased post-traumatic symptom severity among combat veterans. These findings shed light on previously unrecognized affective mechanisms underlying the pathogenesis of PTSD and depression and may help to inform future interventions.

NO. 59

PATIENT CHARACTERISTICS, ATTITUDE AND PERCEPTIONS OF BEING PHYSICALLY RESTRAINED DURING HOSPITALIZATION

Lead Author: Lorena Rodriguez, M.D.

Co-Author(s): Martha P. Ontiveros Uribe, Enrique Chávez León

SUMMARY:
Background: Despite the improvement of psychiatric inpatient care and the controversy over the use of physical restraint, this measure is commonly used to manage disruptive and violent behavior. This study evaluated the attitudes and perceptions of psychiatric inpatients after being physically restrained to explore their experiences and feelings for a better understanding and examined demographics and clinical characteristics of these patients to identify risk factors that can help us to control and reduce the use of this measure. **Methods:** An eight-month observational and descriptive study design was used. The sample consisted of restrained patients in a psychiatric hospital in Mexico City. As soon as they were stable, patients were interviewed by the principal researcher (n=40). Patients answered three different self-reported questionnaires to explore their attitude and perception toward physical restraint. One of the questionnaires was the Restraint Event Patient Debriefing and Comments Form from CAMH to identify and discuss the triggers and antecedent behavior that may have resulted in the use of restraint and if this intervention was helpful. Demographics, clinical characteristics and restraint event were collected. Descriptive statistics, correlations and analysis of variance were used to examine patient responses. **Results:** The average incidence of physical restraint was 18%. Patient mean age was 28.75±12.44; 85% were female. Behavior preceding restraint involved physical (42.4%) or verbal aggression (82.5%), self-harm (57.5%), or physical aggression against others (47.5%). Affective disorders with borderline or narcissistic personality traits were the most common diagnoses, followed by psychosis (mainly schizophrenia) and bipolar manic episodes. Being restrained and hospitalized before, no adherence to treatment before hospitalization, borderline and narcissistic traits, bipolar mania, psychosis, severe suicidality and depression diagnosis were associated with restraint. More than 50% of patients had negative attitudes and didn't accept restraint as a way of management. Helplessness, negligence, rejection, punishment and negative thoughts were the most frequent emotional response. Patients denied the necessity and beneficence of use of restraints. Over 50% of the patients interviewed indicated that they weren't a threat to themselves or another person prior to being restrained and didn't understand this medical decision. Patients could identify that during the event there was a failed communication that could have prevented this measure. **Conclusion:** These findings may reflect the prevalence of these diagnoses among inpatient populations. The events generated strong and negative emotions. Patients can't ascertain this intervention as useful. There is a need to identify interpersonal and environmental triggers for aggressive behaviors and develop interventions that patients find more helpful in order to avoid this intervention.

NO. 60

A CASE STUDY OF ACUTE ONSET OF MANIA IN THE CONTEXT OF MILD TRAUMATIC BRAIN INJURY

Lead Author: Courtney Ann Romba, M.D.

SUMMARY:
In the pediatric population, the incidence of traumatic brain injury is 18 per 100,000. Mild traumatic brain injury is the most common form of brain injury and comprises 90% of all pediatric cases of brain trauma. Previously conducted cohort studies have explored the development of psychiatric illness following pediatric brain injury and have concluded that novel psychiatric disease and personality change does occur in a subpopulation of injured patients. The most common subtypes in personality change that have been identified include affective labile, aggressive, and disinhibited types and, less commonly, apathetic and paranoid subtypes. Such children present with mood dysregulation, behavioral disturbance and significant alteration in their baseline personality. This case report examines the acute onset of manic symptoms in a pediatric patient in the context of a mild traumatic brain injury and the diagnostic, treatment and psychosocial implications of psychiatric symptoms following brain injury and the role of the psychiatric clinician.

NO. 61

CHILDHOOD FACTORS AFFECTING PERSISTENCE AND DESISTENCE OF ADHD SYMPTOMS IN ADULTHOOD: RESULTS FROM THE MTA

Lead Author: Arunima Roy, M.B.B.S.
Co-Author(s): L. Hechtman, L. E. Arnold, J. M. Swanson, M. H. Sibley, B. S. G. Molina, A. L. Howard

SUMMARY:

Background: Persistence of attention-deficit/hyperactivity disorder (ADHD) into adulthood has been estimated to be around 50–60%. Nevertheless, factors that influence long-term persistence of ADHD symptoms are poorly understood. **Objective:** Determine childhood factors that affect ADHD symptom persistence in adulthood. **Methods:** Participants from the Multimodal Treatment of ADHD (MTA) study (n=453) were assessed for the following factors in childhood (mean age eight years): IQ, total number of comorbidities, parent-child relationships, parental mental health problems, parental marital problems, parenting practices, household income levels and parental education. At a mean age of 25, all participants were reassessed for ADHD symptoms using self- and parent-reports on the Conners' Adult ADHD Rating Scale (CAARS). Presence of an ADHD symptom was defined as a score of 2 or more on the four-point CAARS scale when endorsed by either parent or participant. CAARS *DSM* item scores were used to determine persistence and desistence of ADHD symptoms in adulthood based on *DSM-5* criteria (presence of at least five ADHD symptoms). Logistic regressions were used to assess effects of childhood factors on ADHD symptom persistence and desistence in adulthood. Age, sex, original MTA site of randomization and childhood ADHD symptom scores (mean parent- and teacher-rated scores from the Swanson, Nolan and Pelham Questionnaire) were covaried. Results: Total childhood comorbidities (OR=1.15, SE=0.07, p=0.035), parental mental health problems (OR=1.35, SE=0.09, p=0.004) and parental marital problems (OR=1.36, SE=0.15, p=0.038) were associated with an increased risk for ADHD symptom persistence in adulthood. Appropriate discipline (parenting practices) (OR=−1.39, SE=0.13, p=0.013) was associated with a decreased risk for ADHD symptom persistence. We found no associations of IQ, parent-child relationships, household income levels or parental education with adulthood ADHD symptom persistence. After controlling for childhood ADHD symptom severity, only parental mental health (OR=1.28, SE=0.09, p=0.008) and (a lack of) appropriate discipline (OR=−1.38, SE=0.13, p=0.017) showed an association with ADHD symptoms in adulthood. **Conclusion:** Besides initial symptom severity, parental mental health and parenting practices affect persistence of ADHD symptoms into adulthood. Therefore, addressing these areas early may assist in reducing adult ADHD persistence and adverse functional outcomes.

NO. 62

GENE-ENVIRONMENT INTERPLAY IN SEVERITY OF COGNITIVE IMPAIRMENT IN PSYCHOTIC PATIENTS

Lead Author: Geetanjali Sahu, M.B.B.S.
Co-Author(s): Sarah Elmi, M.D., Ali Abbas Rashid, M.D., Kishor Malavade, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Cognitive impairment is a core feature of schizophrenia. These deficits can also serve as an endophenotype for the illness in the studies of genetics. Cognition can be considered a reasonable target for intervention in both schizophrenia and bipolar disorder. One of the most studied genetic phenotypes for psychosis is brain-derived neurotrophic factor (BDNF) Val66Met polymorphism. BDNF has a role in neuronal development and cell survival in response to stress and is abnormally expressed in schizophrenia. In a recent review focused on BDNF Val66Met polymorphism and childhood trauma, we reported that prior investigators suggest it moderates the impact of childhood adversity on later expression of affective symptoms, influences cognition by affecting the amygdala-hippocampal area and can predict psychotic experiences. However, such associations between the Val66Met polymorphism, childhood trauma and cognitive dysfunction have not been adequately addressed, and there is a dearth of findings that can be extrapolated to the patient population. We hypothesize that patients with BDNF Val66Met polymorphism and childhood trauma will have increased cognitive dysfunction and an associated, amplified severity of illness. **Methods:** In this IRB-approved, prospective, case-control study, cases are adult patients (n=200) with a broad *DSM-5* psychotic spectrum disorder (including schizophrenia, schizoaffective disorder and dipolar disorder with psychotic features), recruited from psychiatric inpatients at an urban academic medical center following written consent. Demographic and clinical data are recorded from inpatient electronic health records. Psychiatric interviews are conducted to administer the Childhood Trauma Questionnaire, Brief Psychiatric Rating Scale (BPRS), Montgomery Åsberg Depression Scale (MADRS), Young Mania Rating Scale (YMRS) and Montreal Cognitive Assessment (MoCA). DNA for examining Val66Met polymorphisms is extracted from saliva samples by standard techniques used in our molecular biology laboratory. The Control group is comprised of

healthy volunteers. Data will be analyzed to determine any significant differences and associations by various statistical tests using SPSS package. **Results:** We expect to determine if there exist any direct associations between the Val66Met polymorphism, childhood trauma and cognitive dysfunction in this study population. This is an ongoing study, and data collection is underway. **Conclusion:** Cognitive deficits in psychotic patients are major contributors toward poor functional outcome. They should be considered a reasonable treatment target in individuals with psychosis. Our data attempt to elucidate if there exists a gene-environment association that can help predict the severity of cognitive impairment in psychotic patients, which will be useful in developing new therapeutic modalities in the future.

NO. 63

A CASE OF CLINICAL CONFUSION: WHEN LENNOX-GASTAUT SYNDROME IS MISTAKEN FOR AN ANXIETY DISORDER

Lead Author: Meghan Schott, D.O.

SUMMARY:

Epilepsy and psychiatric disorders are often comorbid. Approximately 20–30% of patients with epilepsy have psychiatric disturbances. Epileptic events can produce symptoms indistinguishable from primary psychiatric disorders. Lennox-Gastaut syndrome (LGS) is a childhood epileptic encephalopathy that is characterized by multiple seizure types with a characteristic electroencephalogram and cognitive dysfunction. LGS has an estimated incidence of 1–10% of all childhood epilepsies. It is often both difficult to treat and diagnose. This case report will demonstrate how complex it is to accurately diagnosis a child with Lennox-Gastaut syndrome, especially when it mimics panic disorder. In addition, it will address common sequelae that are associated with LGS, including psychiatric comorbidities and the impact it has on caregivers.

NO. 64

TREATING INCOMPETENCE TO STAND TRIAL

Lead Author: Cristina M. Secarea, M.D.
Co-Author(s): Navmoon S. Mann, M.D., Sean D. Cleary, Ph.D., M.P.H., Philip J. Candilis, M.D.

SUMMARY:

The forensic literature is unclear on the most consistent influences on the length of time needed to restore inpatients' competence to stand trial. Some studies find older age at admission and a less severe charge to be associated with decreased likelihood of restoration, while others emphasize the relationship between diagnosis and length of time to restoration, namely the differences among intellectual developmental disorders, schizophrenia and schizoaffective disorders. Differences in sample size and descriptions affect the generalizability of data. We present data from a sample of 312 inpatients at a state psychiatric facility found incompetent to stand trial and identify the correlates of restoration from demographic data and severity of charges to number of previous psychiatric hospitalizations, treatment adherence and severity of illness. Unlike other competency restoration studies, we specifically explore the effect of treatment adherence on restoration by monitoring refused doses of psychotropic medication and categorizing the refusals by medication class. We further identify three different categories of subjects based on their adherence, investigating the influence of the number of episodes requiring emergency medication as well. By identifying specific adherence factors influencing time to competence restoration, we anticipate drawing more precise conclusions about the remediable factors influencing inpatient competence restoration.

NO. 65

EXCITED DELIRIUM WITH BATH SALTS AND DESIGNER DRUGS: A CLINICAL, TOXICOLOGICAL, PUBLIC HEALTH AND LEGAL PERSPECTIVE

Lead Author: Pooja Shah, M.D.
Co-Author(s): Stacy Doumas, M.D., Ramon Solhkhah, M.D.

SUMMARY:

With the recent emergence of popular designer drugs, there is an increase in number of reported cases of psychosis. Early 2012 witnessed the legal system moving forward to ban the sale, production and possession of such designer drugs by placing them in the Schedule I controlled substance category. Synthetic cathinones are an emerging class among the designer drugs that are readily available in the illegal market and over the Internet, escaping the legal scrutiny of the lawmakers by marking them "not for human consumption." Cathinones fail to be smelled by detection dogs and are undetected by a routine urine toxicology screen, requiring advanced gas chromatographic analysis of urine and hair. Euphoric and agitating effects mimic those caused by

amphetamines and cocaine. Easy access has led to an increase in abuse potential of such drugs, causing a rise in the reported cases in emergency rooms and poison control centers. This poster highlights the phenomenology, epidemiology, incidence, detection methods and management of psychosis associated with abuse of cathinones. The manufacturers have always been a step ahead of federal and state legal systems, heralding imposition of stricter legislation and regulatory control for designer drug distribution and criminally charging those found in possession. Utmost importance is given to highlight the role of emergency physicians in maintaining a high index of suspicion of abuse from these drugs due to the potential concomitant coingestion of various drugs of abuse and management of poly substance abuse involving cathinones. Physicians should raise awareness of the dangers, spread and use of designer drugs through community outreach since these drugs are a significant threat to public health. **Keywords:** Designer Drugs, Synthetic Drugs, Cathinone, Excited Delirium, Psychosis, Methedrone, Methylone, Public Health, Legal

NO. 66

AFTEREFFECTS OF LEGALIZATION OF MARIJUANA: AMERICA ON THE GIANT CHILL PILL!

Lead Author: Pooja Shah, M.D.
Co-Author(s): Stacy Doumas, Ramon Solhkhah

SUMMARY:

The recent years have witnessed a shift in cultural and spiritual approaches toward cannabis sativa. Over the years, cannabis has faced its fair share of criticism and condemnation with respect to its promising medicinal applications and recreational benefits with a questionable addiction potential. Recreational use continues to increase despite demonstration of some addiction potential in adolescents and exacerbation of preexisting psychiatric illness in the general population. Currently, marijuana is the most commonly used illicit drug in United States, with 12% of population above the age of 12 years and older having reported higher usage. As of June 2015, 23 states in United States have decriminalized the use of marijuana, with restrictions on age and possession limits. This poster highlights the important aspects of aftereffects of the legalization of marijuana in health care, hospital admissions, crime rate, accidents and psychiatric illnesses. Despite some promising uses to help alleviate conditions like glaucoma, HIV-associated cachexia, epilepsy, MS and many others, marijuana continues to be a Schedule I drug. With respect to medical outcomes, marijuana has been increasingly used as a “gateway drug." Newer studies show that marijuana consumption substitutes the use of alcohol, decreasing the number of motor vehicle accidents and crimes associated with alcohol intoxication. There has been a concomitant decrease in the use of nicotine with the advent of marijuana, but we need evidence to look for a decrease in the cancer rate associated with it. There is a high incidence of psychosis and exacerbation of underlying psychiatric illnesses like schizophrenia associated with its use. It has been shown to be highly addictive in adolescents with impaired neural connectivity and structural changes noted on brain imaging with prolonged use. There have been reports of a decrease in IQ and an increase in school absenteeism and failing grades, eventually increasing unemployment and crime rates. The various outcomes with regard to governmental policy include a population shift in the areas where marijuana was previously legalized, an increase in endogenous production of marijuana in the United States with the availability of high-quality weed at an affordable price, and an eventual decreasing the number of crimes and arrests associated with marijuana. The hefty taxes on marijuana have been proposed to be used for schools and other projects for marijuana regulation, saving hundreds of dollars in taxpayers’ money. Marketing legal marijuana will lift up other industries like food secondary to munchies, tobacco for its marketing and distribution, and various others, creating job opportunities for Americans. Conversely, we will see a significant negative effect on the alcohol industry, pharmaceuticals and prisons. **Keywords:** Marijuana, Legalization, Gateway drug, Schedule I, Alcohol, Tobacco, Recreational, Crime

NO. 67

ORAL KETAMINE FOR TREATMENT-RESISTANT MAJOR DEPRESSION: A DOUBLE-BLIND RANDOMIZED CONTROLLED TRIAL

Lead Author: Haggai Sharon, M.D.
Co-Author(s): Yoav Domani, M.D., Maya Bleich-Cohen, Ph.D., Nadav Stoppelman, Ph.D., Talma Hendler, M.D., Ph.D., Ricardo Tarrasch, Ph.D., Shaul Schreiber, M.D., Roi Meidan, M.D., Haggai Sharon, M.D.

SUMMARY:

Background: Major depression is a devastating common disorder. Current pharmacotherapy relies on the monoaminic theory and requires a substantial time for full therapeutic effect. Regrettably, about 40% fail to attain remission, defined as treatment-resistant depression (TRD). Recently, intravenous ketamine has been shown to provide rapid, short-lived amelioration of TRD. We assessed the clinical efficacy and safety of oral ketamine for TRD. **Methods:** In a double-blind, randomized, placebo-controlled trial, 27 TRD outpatients received either oral ketamine or placebo for 21 days. Patients were evaluated prior to the trial and after 21 days. The main outcome measure was the change in Montgomery Åsberg Depression Rating Scale (MADRS) score. **Results:** Fourteen subjects were randomized to the ketamine group and 13 to the placebo group. Of these, 12 and nine, respectively, completed the study. No significant differences were obtained at time zero. A significant reduction of 13.4 points in MADRS score was obtained after 21 days in the ketamine group ($p=0.003$), while a nonsignificant reduction of 2.9 was observed in the placebo group. Four subjects (33%) attained remission (MADRS≤10) in the ketamine group compared to none in the placebo group. No serious side effects were reported. **Conclusion:** In this study, subanesthetic oral ketamine produced rapid amelioration of depressive symptoms in ambulatory TRD patients and was well tolerated. The results of this study suggest that oral ketamine may hold significant promise in the care of TRD.

NO. 68

LEFT VENTRICULAR THROMBUS AS A COMPLICATION OF CLOZAPINE-INDUCED CARDIOMYOPATHY: A CASE REPORT

Lead Author: Balwinder Singh, M.D., M.S.
Co-Author(s): Shahbaz A. Malik, M.D., Sarah Malik, M.D., Taylor F. Dowsley, M.D., James L. Roerig, Pharm.D.

SUMMARY:

Background: Clozapine is the most effective agent for treatment-resistant schizophrenia. Despite its efficacy, the drug has been associated with serious adverse effects such as fatal agranulocytosis and cardiovascular complications (e.g., myocarditis and cardiomyopathy). The former is monitored with the help of regular laboratory testing. However, the cardiovascular side effects still elude early detection. We present this case of dilated, non-ischemic cardiomyopathy found in a patient taking clozapine to help bring this potential and gravely morbid complication to light, hopefully increasing awareness among practitioners. **Case:** A 48-year-old male with a history of schizoaffective disorder on clozapine presented with chest pain, dyspnea and new left bundle branch block (LBBB). He underwent coronary angiography, which revealed no atherosclerosis. The patient's workup did not reveal a cause for the cardiomyopathy, and thus it was thought that clozapine was the offending agent. He was taken off clozapine and started on heart failure therapy. During the course of hospitalization, he was discovered to have a left ventricular (LV) thrombus for which he received anticoagulation, which helped to decrease the size of the thrombus. LV thrombi are an uncommon yet known complication of myocardial infarctions. Furthermore, severe mitral regurgitation (MR) has been thought to have a protective role in LV thrombus formation in patients with reduced ejection fraction (EF). It is unclear whether clozapine itself could be implicated in the thrombus formation, as there have been reports of possible association of clozapine with venous thromboembolic phenomenon. However, it is just as likely that the thrombus was related to poor LV function and the cardiomyopathy itself. **Conclusion:** To our knowledge, this is the first case report of cardiomyopathy related to clozapine that was further complicated by an LV thrombus, despite presence of MR. Treatment of clozapine-induced cardiomyopathy involves cessation of the drug. Guideline-directed therapy for heart failure should be instituted. Other treatment goals include prevention of additional cardiac injury. Alternative antipsychotics such as olanzapine have been used in most other cases. Several reports have noted that there was an improvement in cardiac function on echocardiogram after cessation of clozapine. In general, patients with an EF<25% at the time of diagnosis have a poor prognosis, including the highest risk of mortality with limited recovery. Patients with an EF of 25–40% generally show significant improvement. Patients with an EF>40% usually show near complete recovery of cardiac function at six months after cessation of clozapine and with normal heart failure treatment. Patients withdrawn from clozapine for medical reasons have a higher risk of relapse. Therefore, clozapine cessation should be done under supervision of a psychiatrist, and appropriate alternative medication be substituted to prevent relapse.

NO. 69

EXPLANATORY MODELS OF ADDICTIVE BEHAVIOR AMONG UGANDANS

Lead Author: Hanna Sjöstrand, M.D.

SUMMARY:

Background: There are a few studies about explanatory models of addiction. Alcohol addiction is a growing clinical problem in Uganda. The alcohol consumption is among the most voluminous worldwide. Explanatory models of alcohol addiction are not known; neither is its consequence for treatment, as there is a lack of African studies about explanatory models of addiction. Explanatory models are important as it is known that they have consequences for treatment and can lead to better understanding of the patients' perspective and adapting treatments. **Objective:** Investigate explanatory models of how Ugandans understand, talk about and try to solve their problems with alcohol. **Methods:** The Explanatory Model Interview Catalogue (EMIC) was used for 30 individual interviews to investigate how patients with alcohol addiction understand their disease and how relatives, health care workers, religious leaders and traditional healers relate to the problems. The explanatory models were analyzed with a qualitative content analysis. This poster presents results from an analysis of the 10 interviews with patients. **Results:** Financial problems, in many cases due to job loss, and deteriorated relationships with family and friends were the most frequently reported effects from alcohol addiction on these patients' lives. The patients who first came to rehab centers had heard positive reports about it. Another contributory reason to visit the rehab centers was that the patients knew that examination of the body would be done. Some patients disclosed their fear of liver disease and HIV. All patients believed that medicines from the hospital as well as assistance from religious sources were helpful. Therapy and counselling were considered more helpful than medicine, but a combination was preferred. The patients who went for help to the rehab center were satisfied, as were the majority of the patients looking for help in churches. Those who had been to traditional healers were not satisfied. Several participants explained that there is a common belief in their culture that a spirit is drinking through the person. According to the patients, most Ugandans were reported to seek help first from witch doctors or hospitals. Almost all patients reported that they thought less of themselves. They also reported that others think less of them. The patients disclosed that others like family members and friends have avoided them. They had difficulties getting along with family, relatives and friends. **Conclusion:** The patients reported that there are social and spiritual causes for alcohol addiction. They see alcohol as an important part of the culture. The results prove that it is important in clinical contexts to investigate the patients' explanatory models. More research should be done about addiction within different cultures to better understand the problem and the affected persons.

NO. 70

NEUROBIOLOGICAL EVIDENCE OF VULNERABILITY TO PTSD IN ADHD: A CONTROLLED MRI STUDY ASSESSING FEAR CIRCUITRY IN NON-TRAUMATIZED ADULTS WITH ADHD

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SUMMARY:

Background: A recent meta-analysis documented a robust statistical association between ADHD and PTSD, suggesting that individuals with ADHD may have a neurobiological vulnerability for PTSD. Neurobiological deficits specific to PTSD have been found using a two-day fMRI fear conditioning and extinction paradigm, showing impairments in the fear extinction network during extinction learning and recall in individuals with PTSD compared to traumatized individuals without PTSD. We used the same well-established fMRI fear conditioning and extinction paradigm to examine whether non-traumatized ADHD subjects have dysfunctional activation in brain structures that mediates fear acquisition and extinction, which could be neurobiological evidence of vulnerability to PTSD. **Methods:** The sample consisted of medication-naïve, non-traumatized young adult subjects with (n=27) and without (n=21) ADHD. Subjects underwent a two-day fear conditioning and extinction protocol in a 3-T functional magnetic resonance imaging scanner. On day 1 in conditioning, subjects were presented with three differently colored stimuli, two of which were paired with a mild electric shock at a partial reinforcement rate of 60%. In extinction learning, only one conditioned stimulus was extinguished. On day 2 in extinction recall, all three

stimuli were presented without shocks, in order to assess retention of extinguished fear. Skin conductance response (SCR) was collected throughout the experiment as an index of the conditioned response. **Results:** ADHD subjects showed significantly more impaired functional activation of brain structures involved in fear extinction in every phase of the fear paradigm (conditioning, extinction learning and extinction recall) compared with controls. Specifically, ADHD subjects had significantly less activation in the ventromedial prefrontal cortex (vmPFC) during both extinction learning and recall, as well as significantly less activation in the hippocampus during extinction recall, similar to deficits previously documented in PTSD subjects compared to traumatized controls without PTSD. **Conclusion:** These findings suggest that less vmPFC activation during extinction learning and recall and less hippocampal activation during recall may represent an underlying vulnerability to PTSD in non-traumatized individuals with ADHD. Since similar deficits have been previously documented in PTSD subjects compared to traumatized controls without PTSD, these new findings support the hypothesis that ADHD is associated with a neurobiological vulnerability for PTSD. These findings also raise the possibility that deficient activation of the vmPFC and hippocampus during extinction retention may actually represent a pre-trauma vulnerability to PTSD, as opposed to an acquired deficit associated with PTSD itself. If confirmed in future research, these findings would have very important clinical, scientific and public health implications.

NO. 71

THE KING OF SPIROCHETES GOES WILD! NEUROSYPHILIS-TRIGGERED MANIA

Lead Author: Leah R. Steinberg, M.D.
Co-Author(s): Ramotse Saunders, M.D.

SUMMARY:

Background: Despite the fact that syphilis' incidence has declined since the advent of penicillin, it is still important to screen patients for the disease. Neurosyphilis has currently presented either asymptomatically or as dementia. When presenting with psychiatric symptoms, the majority of patients do not have manic symptoms. It is important for clinicians to be aware of this uncommon presentation to facilitate early diagnosis. **Case:** A 51-year-old HIV-positive African-American man with no known psychiatric history was admitted to investigate reported diarrhea and anorexia for the previous three weeks. Consultation-liaison consult was requested to assess the patient's odd behavior. The patient was found to have pressured speech and grandiose and paranoid delusions during the interview. He reported lack of sleep and appetite for one week, accompanied by a 10lbs weight loss. He denied substance use; however, he did not provide urine toxicology due to limited cooperation and paranoid delusions about certain health care providers. CBC, CMP, TSH, vitamin B12, folate and testosterone were within normal limits. Head CT was unremarkable. Rapid plasma reagin was reactive (1:64). The patient did not agree to lumbar puncture initially due to paranoid ideation and was started empirically on intravenous penicillin G. Subsequent CSF showed 10 WBC, 96% lymphocytes, and normal glucose and protein after three days of antibiotic therapy. CSF VDRL was negative. Decision to pursue inpatient psychiatric treatment was deferred until completion of intravenous antibiotic therapy. The patient refused any psychotropic treatment. **Results:** The patient was hospitalized for 16 days and treated with intravenous penicillin G for 10 days, showing total resolution of manic symptoms. **Conclusion:** Manic symptoms in this patient were possibly due to neurosyphilis. We recommend assessing all patients, regardless of age, with new-onset behavioral and mood disturbances for all possible medical etiologies, even when the presentation is "classic."

NO. 72

CHANGES IN FDA GUIDELINES FOR A CLOZAPINE MONITORING SYSTEM IN THE VETERAN AFFAIRS MEDICAL SYSTEM

Lead Author: Ryan S. Sultan, M.D.
Co-Author(s): Erica Duncan, M.D., Mark Olfson, M.D., M.P.H.

SUMMARY:

Background: Although clozapine remains the only medication approved by the U.S. Food and Drug Administration (FDA) for treatment-resistant schizophrenia, only a minority of patients with treatment-resistant schizophrenia are treated with clozapine. Patient and physician concerns about tolerability and medication complications are barriers to treatment. A recent change in FDA monitoring recommendations seeks to increase clozapine treatment continuity without endangering patients by reducing the threshold absolute neutrophil count for treatment interruption from 3,000/Î¼L to 1,000/Î¼L and removing white blood

count thresholds from the monitoring algorithm. **Objective:** Assess the impact of the recent changes in FDA neutropenia monitoring recommendations on clozapine treatment continuity. **Methods:** We analyzed the outpatient prescribing records for antipsychotics in the Veterans Integrated Service Network 7 (VISN 7) of the Department of Veteran Affairs between 1999 and 2012. This includes eight medical centers in Georgia, Alabama and South Carolina. We evaluated results of complete blood count monitoring to compare percentages of patients who developed at least one neutropenic event under the old and new recommendations. Among those with events, we compared the mean number of events during the 12 months following clozapine initiation. **Results:** From a cohort of 15,953 patients with schizophrenia (ICD-9-CM: 295.x), 246 patients (1.54%) initiated clozapine and provided 12 months of follow-up data. Under the old recommendations, 14 clozapine patients (5.69%, 95% CI [2.80, 8.58]) developed events, compared to one patient (0.04%) under the new recommendations. Under the old recommendations, the patients with events (n=14) had a mean of 3.43 (95% CI [0.0, 10.02]) events, while the individual with an event under the new recommendations had two events during the follow-up year. No events of agranulocytosis were observed during the study period. **Conclusion:** The new FDA monitoring guidelines are likely to substantially reduce the percentage of patients who meet criteria for clozapine-associated neutropenic events requiring clinical intervention. This decrease may reduce the clinical burden of managing patients on this uniquely effective medication.

NO. 73

EXAMINING THE CLINICAL COURSE OF MAJOR DEPRESSIVE DISORDER IN SEVERELY OBESE PATIENTS: THE TORONTO OBESITY PSYCHOSOCIAL COHORT STUDY

Lead Author: Gurneet S. Thiara, M.D.
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SUMMARY:

Background: Current literature has shown that obesity and mood disorder are frequently associated in both the prevalence and risk of development of obesity. Although previous studies have established a bidirectional relationship between obesity and major depressive disorder (MDD), limited data exist on the impact of MDD depression versus obesity onset on depression course in severely obese samples. **Objective:** Determine if the temporality of onset of MDD and obesity impacts MDD clinical outcomes in bariatric surgery candidates. **Methods:** Participants were recruited as a part of the Toronto Obesity Psychosocial Cohort Database. Participants (n=157) were selected from a larger prospective study based on these inclusion criteria: diagnosis of MDD or bipolar disorder (BD), age at least 18 years and ability to provide informed consent. Onset of obesity and MDD were collected using a standardized clinical interview during the presurgery assessment process. Data collected included demographic data and onset of obesity (body mass index [BMI]>30) and initial depressive episode. Collected MDD course and severity outcomes included the number of psychiatric hospitalizations, major depressive episodes (MDEs), current psychiatric medications, lifetime suicide attempts and current quality of life (SF36).Outcomes were compared between patients who initially developed depression (MDDI) and patients who initially developed obesity (OBESEI) using a Wilcoxon rank sum test for continuous variables and Fisher's exact test for categorical variables. **Results:** Out of 157 participants, 110 (70.6%) were OBESEI. Participants with MDDI were more likely to have an increased number of lifetime MDEs (4.64±8.47 vs. 2.63±5.78, $p<0.001$) and higher number of psychiatric medications (1.87±1.58 vs. 0.82±0.96, $p<0.001$). There was no significant difference between the MDDI and OBESEI groups on SF36 scores or lifetime suicide attempts. **Conclusion:** Patients who had an initial major depressive episode before the onset of obesity (MDDI, BMI>30) in the clinical course had a significantly higher number of lifetime MDEs and prescribed psychiatric medications. This suggests that early psychiatric and psychosocial interventions for MDD may change the clinical course for patients requiring evaluation for bariatric surgery candidacy.

NO. 74

TOBACCO USE IN FIRST-EPISODE PSYCHOSIS: CLINICAL CHARACTERISTICS AT BASELINE

Lead Author: Alba Toll, M.D.
Co-Author(s): Anna Mané, Daniel Bergé, Jose María Ginés, Víctor Pérez-Solà

SUMMARY:

Background: Schizophrenic patients have a higher incidence of tobacco use than the general population. Moreover, nicotine has been described

to have positive effects on the negative symptoms of schizophrenia; it increases drive and improves cognitive function. Schizophrenic patients with a high level of negative symptoms are at particular risk of being heavier smokers. Besides, some studies found more positive symptoms but fewer negative symptoms in smokers than in non-smokers; heavy smokers had the highest positive and lowest negative symptom scores. Although there are enough studies on chronic schizophrenic patients about this issue, the effects of tobacco use in first-episode psychosis (FEP) are not well established yet. **Objective:** Understand which baseline characteristics (age of onset, duration of untreated psychosis (DUP), substance use, diagnosis) and clinical outcomes differ between tobacco users and nonusers in FEP. **Methods:** 175 FEP patients were consecutively admitted to Hospital del Mar from January 2008 to September 2014 and entered the institution's first episode program. The included evaluations were sociodemographic and clinical data at baseline. We studied differences in age, DUP, diagnosis, substance use, Global Assessment of Functioning (GAF) scores and Positive and Negative Syndrome Scale (PANSS) subscale scores at baseline between tobacco users and nonusers. We used the chi-square test for categorical data and Student's t test to compare the means for continuous data. Moreover, we studied the correlation between tobacco per day and age at onset, cannabis per week, DUP, PANSS subscales scores and GAF scores at baseline using Pearson correlation. **Results:** In our FEP sample, we did not find significant differences between smokers and nonsmokers in gender, age of onset, diagnosis or DUP. However, we did find significantly higher cannabis ($p=<0.001$), alcohol ($p<0.001$) and cocaine ($p=0.003$) use in the tobacco users group. Moreover, FEP tobacco users have a significant higher GAF score ($p=0.04$) and lower PANSS negative score ($p=0.039$) than nonsmokers. We found a positive correlation between tobacco per day and cannabis per week ($p=0.021$), DUP ($p=0.017$) and GAF score ($p=0.039$) in FEP patients. **Conclusion:** Our results are in agreement with recent studies that show a high rate of substance use disorders among people with FEP and a better premorbid adjustment in these patients. Moreover, we find fewer negative symptoms in tobacco use FEP; this relation could be explained by the fact that nicotine could improve the deficits of schizophrenia such as cognition, working memory and attentional deficits. Besides, some recent studies show a correlation between the number of cigarettes consumed daily in this patient group and the occurrence of prodromal symptoms of schizophrenia. However, more studies should be done to clarify the association between tobacco use and clinical characteristics of FEP patients.

NO. 75

NEUROCOGNITIVE PERFORMANCE IN ADULT PATIENTS WITH ADHD, BIPOLAR DISORDER (BPD) AND COMORBID ADHD/BPD: ARE THERE DIFFERENT NEUROCOGNITIVE PROFILES?

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SUMMARY:

Background: Research on the neurocognitive impairment of bipolar disorder (BD) comorbid with attention-deficit/hyperactivity disorder (ADHD) in adult population is very scant. In a recent study, these patients had a worse cognitive performance than patients with ADHD and healthy controls, but a "non-comorbid" BD group was not included. **Objective:** Study the neurocognitive profile of subjects with BD and comorbid ADHD compared to "pure" BD (pBD), "pure ADHD" (pADHD) and healthy controls (HC). Also, determine which cognitive domains were most impaired in each group. **Methods:** This is a three-site study that included 229 subjects: 70 pBD patients, 23 BD patients with ADHD, 50 patients with ADHD and 86 healthy control subjects. All BD subjects were recruited and assessed at the Bipolar Disorder Unit at Hospital Clínic, Barcelona. Subjects with ADHD were assessed at the Adult ADHD Unit at Hospital Vall d'Hebron and at Hospital Santa Maria at Lleida. The healthy control subjects were assessed at Hospital Clínic, Barcelona, and at Hospital Santa Maria, Lleida. All patients with BD had been euthymic for at least six months. The neuropsychological performance of the participants was examined and compared by means of a comprehensive neurocognitive battery. Neurocognitive data were analyzed using composite scores, including six cognitive domains: processing speed, working memory, attention, executive functions, verbal and learning memory, and visual memory. Besides, this model provides groups of

different neurocognitive profiles. **Results:** All the clinical groups had a worse performance than the HC group in most cognitive domains. Among clinical groups, the results also showed the following statistical differences: the pBD group was more impaired than the pADHD on the executive function (p=0.003) and visual memory (p=0.004) domains; the BD+ADHD group had a lower performance on executive function (p=0.011) when compared with pADHD group. However, we did not detect significant differences in all cognitive domains between the pBD and BD+ADHD groups. **Conclusion:** Our results show that the three groups of patients had a worse performance in most of neurocognitive domains than HCs. Bipolar patients with comorbid ADHD had similar performance scores in all cognitive domains to the pBD group. Therefore, the comorbid group was not more impaired than the pBD group despite suffering a comorbid disorder. Besides, the only significant difference between the BD+ADHD group and the pADHD group was on the executive function domain, where the former scored worse. The pADHD group showed a similar neurocognitive profile to the other two groups, but without impairment in the executive function and visual memory domains.

NO. 76

THE SUMMER BRIDGE PROGRAM: RECRUITING YOUTH FOR A NEW GENERATION OF MENTAL HEALTH PROFESSIONALS

Lead Author: David Tran, M.D., M.P.P.
Co-Author(s): Mayumi Pierce, Angela Tang

SUMMARY:

Background: As efforts are undertaken to improve access to health care, a shortage of mental health professionals and mental health stigma remain ongoing barriers to mental health treatment. In order to address the need for minority mental health care providers, Richmond Area Multi-Services, a mental health agency, has developed the Summer Bridge Program, an innovative pipeline program intended to 1) Promote awareness of psychological well-being in youth participants from underrepresented backgrounds and 2) Foster interest in community mental health as a career option. The Summer Bridge is an essential pipeline program for the community and the field of mental health. Previous studies have demonstrated that pipeline programs have increased enrollment of underrepresented minority students into the field of medicine. **Objective:** 1) Assess impact on youth in regard to mental health awareness and interest to pursue a mental health-related career and 2) Assess impact on the families of youth in terms of their views and knowledge of mental health. **Methods:** This study used qualitative (focus groups) and quantitative (surveys) analyses from data collected from participants of the Summer Bridge Program in 2014 and their families. **Results:** Twenty-four high school students from underrepresented backgrounds participated. Sixty percent of participants were female, 31% were male and two percent were transgender. Participants were from a diverse background; 30% were bilingual. In the preprogram questionnaire, 63% did not know what psychological well-being is. Fifty percent were unsure about pursuing a career in the mental health field. Forty-two percent reported not knowing how to cope with stress. In the postprogram questionnaire, 100% reported understanding what mental health is. Eighty-six percent reported interest in the mental health field. Eighty-two percent reported learning how to cope with stress. All participants reported wanting to give back to their community and engage in a career that provides that opportunity. In the parent survey, 94% reported that their child developed skills to cope with stress as a result of the program. Ninety-four percent reported that they now have a better idea of their child's future career plans. In focus groups, common themes were 1) Lack of knowledge on the roles of the different mental health providers and career paths; 2) Interest in the mental health field; and 3) Concerns of the stigma of a mental health career within families. **Discussion:** The Summer Bridge can help 1) Raise mental health awareness and knowledge in both youth and their families; 2) Create a positive view of mental health in the community; and 3) Encourage youth to choose a career in the mental health field. Future directions will include outreach to alumni and analysis of data collected from the inception of the program in 2009 to the present. Funding for this research was made possible by the SAMHSA/APA Minority Fellowships Program.

NO. 77

CHANGES IN PATIENT BELIEFS REGARDING TREATMENT ASSIGNMENT WITHIN A PLACEBO-CONTROLLED RANDOMIZED CONTROLLED TRIAL OF MAJOR DEPRESSIVE DISORDER

Lead Author: Sagar Vijapura, M.D.
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B.A., George Papakostas, M.D., Lawrence H. Price, M.D., Linda L. Carpenter, M.D., Audrey R. Tyrka, M.D., Ph.D., Maurizio Fava, M.D., David Mischoulon, M.D., Ph.D.

SUMMARY:
Objective: Report the evolution of and factors influencing treatment guesses over the course of a double-blind, placebo-controlled clinical trial comparing escitalopram and S-adenosyl-L-methionine (SAMe). **Methods:** 189 outpatients with major depression and baseline scores of 20 or more on the 17-item Hamilton Depression Scale (HDRS-17) were randomized to SAMe 1,600–3,200mg/d, escitalopram 10–20mg/d or placebo for 12 weeks. Treatment assignment guesses were collected at the following visits: baseline, week 6 and week 12. A modified intent-to treat (mITT) sample of 166 subjects (mean age=44.9) with at least one post-baseline visit and available guess data was analyzed. Linear multiple regression analysis was used to determine associations between guesses and clinical improvement. Logistic regression was used to assess for longitudinal associations of treatment guesses with adverse effects (AEs). **Results:** All treatment arms demonstrated significant improvement in the HDRS, and no significant differences were observed between treatment arms. At baseline, a majority of subjects anticipated being randomized to SAMe (60.2%) rather than escitalopram (23.3%) or placebo (16.5%); however, the guess distribution evened out over time. Initial and week 6 treatment guesses of active treatment were not associated with clinical improvement. Over the course of the clinical trial, guesses were influenced by clinical improvement but not by treatment-emergent AEs. **Conclusion:** In contrast to previous retrospective reanalyses, patient anticipatory beliefs regarding treatment assignment before randomization did not predict symptomatic improvement. Guesses were influenced by clinical improvement and not by treatment-emergent AEs over the course of the trial.

NO. 78

SOCIOCULTURAL INFLUENCE ON DELUSIONAL CONTENT IN A JAPANESE WOMAN WITH EROTOMANIA: A CLINICAL CASE REPORT

Lead Author: Jose Vito, M.D.

SUMMARY:
Erotomania is a delusion of love. An erotomanic individual believes that he or she is the recipient of intense love from someone of high status or celebrity. Erotomania may occur independently, as a form of delusional disorder, or secondary to a psychotic illness such as schizophrenia. Erotomania has been increasingly described in international literature, with several reports of erotomanic delusions occurring in Asian patients. Culture, environment and isolation are thought to shape delusional content, with literature citing cross-cultural differences in the prevalence of erotomanic symptoms in psychotic disorders. We report on a case of a divorced and isolated Japanese woman with a history of schizophrenia who held a longstanding belief that a famous Hollywood actor, Charlie Sheen, was in love with her. She travelled from Japan to New York with the intent to marry this actor. Over the course of four years of treatment, this erotomanic delusion persisted while her other psychotic symptoms (thought disorder, delusions of grandeur) improved with clozapine treatment. Only after changes were made to the patient's living situation, which allowed the patient to be more engaged with the community and removed the patient's previous social isolation, did her erotomanic fixation regarding the Hollywood actor remit. To our knowledge, this is the first case report of erotomania in a Japanese patient and, additionally, uniquely reporting on a patient who is above all isolated by immigration and life as an outsider. Our patient lived alone in Japan for many years and continued to remain isolated due to cultural and language barriers in America during the years we treated her psychosis. Cultural factors in Japan and the patient's solitary lifestyle influenced the formation of her erotomanic delusion, which was perpetuated by the loneliness of life as an immigrant. This case highlights the importance of social and cultural factors in the formation of delusions and the importance of psychosocial intervention in the treatment of a fixed delusion that is resistant to medications. In particular, clinicians should be cognizant of the challenges that arise in the cross-cultural setting in which cultural and language barriers can perpetuate isolation.

NO. 79

HOW DO WE ANALYZE LONG-TERM INJECTION BEHAVIOR AMONG HEROIN ABUSERS?

Lead Author: Shao-Cheng Wang, M.D., Ph.D.
Co-Author(s): Greg D. Kirk, M.D., Ph.D., Shruti H. Mehta, Ph.D., Brion Maher, Ph.D.

SUMMARY:

Background: Substance use disorders are chronic and recurrent. Previous studies supported that substance abusers can be categorized into subgroups with different trajectories such as early quitters, persistent users and relapses. Injection is strongly associated with substance dependence. Analysis of long-term injection records can perhaps help us to identify their trajectories. Before analysis, we needed to solve an issue present in many longitudinal data sets. **Methods:** The sample was drawn from the AIDS Linked to the Intravenous Experience (ALIVE) cohort. Using the semi-annual report from the ALIVE participants over twenty years, we performed exploratory data analysis and obtained the distribution of missing data. Using multiple imputation, we performed three different models to impute the missing data. The covariates included gender and age at which the subject first injected. In the universal model, we used all existing reports as predictors. In the two-predictor model, we used two types of existing reports: six months prior and six months later. In the one-predictor model, we used only the prior six months report. Sensitivity tests were done by random deletion of observed raw data points and re-imputing the data to test accuracy. The number of re-imputations was ten for each model. We checked the rates of agreement between the observed data and the re-imputed data for these three models. Multiple imputation and sensitivity tests were performed using STATA 12. **Results:** This sample includes 1,197 participants drawn from the ALIVE cohort. The median age at first visit was 34. There were 287 (24%) females and 882 (76%) males. They visited semiannually with 19 average visits per person. The population was predominantly African American (98%). We tracked the data from self-report between age of first injection and sixty years old. Approximately 67% of the data was missing. The sensitivity tests showed that the agreement percentage of the one-predictor, two-predictor and universal models were 62%, 74% and 74%, respectively. The kappa of the two-predictor and universal models were 0.47 and 0.48, respectively. **Conclusion:** In the universal model, we supposed that causal factors continuously influence injection behavior in all phases. In the two-predictor model, we supposed that causal factors change in different phases but may correlate with those visits closest in time. In the one-predictor model, the imputed reports were only influenced by the existing reports at the identical time period. The results of the sensitivity test support the universal model and suggest that intravenous drug users may be influenced by some causal factors throughout their lives. We believe that these causal factors include genetic factors.

NO. 80

PREDICTING HOSPITALIZATION DURING EMERGENCY DEPARTMENT VISITS BY CHILDREN AND ADOLESCENTS FOR PSYCHIATRIC COMPLAINTS

Lead Author: Anna K. Wiste, M.D., Ph.D.

Co-Author(s): Thomas H. McCoy Jr., M.D., Victor M. Castro, M.S., Ashlee M. Roberson, B.A., Leslie A. Snapper, B.A., Laura M. Prager, M.D., Roy H. Perlis, M.D., M.Sc.

SUMMARY:

Children and adolescents frequently present to emergency departments (EDs) with psychiatric complaints. Early assessment of the probability of need for psychiatric hospitalization could assist staff in decision making about resource allocation in the context of scarce psychiatric hospital beds. We therefore built a predictive model for psychiatric hospitalization among children presenting to the emergency room using electronic health record (EHR) data. To build this model, data were extracted from the EHR for visits occurring between November 2008 and March 2015 by individuals aged 4–19 (n=4020). Features used in the analysis included patient demographics, clinical history and presentation and ED course. Visits from 2014 and 2015 (n=890) were held out as a testing set, and modeling was done for the remaining visits (n=3,130). We first built a logistic regression with all features, then a second model was built including only baseline features; ED course features were excluded. The performance of both models was then assessed in the testing set. Visits were assigned to quartiles based on risk prediction by each model, and hospitalization rates within quartiles were compared. There were 4,020 visits by 3,061 children and adolescents. Median age was 16 (IQR=13–18). Patients were 51.3% female and 60.5% white, and 57.3% of children had private insurance. The patient was hospitalized in 58.4% of visits. Chief complaint of suicidal ideation or attempt, arrival on legal involuntary hold, completion of urine toxicology screen, administration of antipsychotics or benzodiazepines, and prior psychiatric ED visits were associated with significant independent risk of hospitalization in the model that contained all features (all $p<0.0005$). Area under the receiver operating curve (AUC) was 0.70 (95% CI [0.66, 0.73])

in the validation set for the full model. The model including only baseline features had AUC=0.66 (95%CI [0.62, 0.70]) in the validation set. In the model including only baseline features, frequency of hospitalization was 46% in the lowest quartile, 61% in the second quartile, 69% in the third quartile and 79% in the highest quartile. In all, nearly 60% of children who required psychiatry consult at our ED were hospitalized. Features identified as significant in multivariate regression were consistent with a priori hypotheses, particularly suicidality and arrival on involuntary hold. A model including baseline features easily accessible in the EHR at triage would stratify children and adolescents by risk of requiring hospitalization. Clinicians can then consider that risk in determining such aspects of the visit as timing of evaluation and engagement of disposition planning.

NO. 81

UTILIZING MEASURES OF CLIENT MOTIVATION AS INDICATORS OF COMPLETION IN RESIDENTIAL SUBSTANCE USE DISORDER TREATMENT IN THE PUBLIC MENTAL HEALTH SYSTEM

Lead Author: Keith Wood, M.D.
Co-Author(s): Melanie Thomas, M.D., M.S., James Dilley, M.D., Scott Collier, Ph.D., M.S.W., Joshua Parmenter, B.A., Christina Mangurian, M.D.

SUMMARY:
Background: Recent epidemiologic studies show that the lifetime prevalence of *DSM-5* substance use disorders (SUDs) in the United States approaches 10%, and yet only 25% of these individuals receive any form of treatment. Even among those that do receive care at publicly funded residential treatment programs (RTPs), completion rates are low. Forthcoming changes in allocation of federal program funding in California will expand the range of services and simultaneously reduce the maximum length of stay in RTPs. Although measures of motivation and preparedness for treatment (TCU MOTform) have been shown in previous smaller studies to predict patient retention in RTPs, few studies have been completed in large and diverse patient populations such as ours. HYPOTHESIS: The primary hypothesis of this study is that higher motivational scores indicate higher probability of completion of an RTP and longer length of stay within a diverse population. The secondary hypothesis is that higher initial motivational scores result in decreased likelihood for subsequent recidivism among clients who have previously completed the RTP. **Methods:** Initially, we will examine retrospectively collected administrative data on diverse patients served at five separate residential treatment facilities in the San Francisco area between July 1, 2014, and November 30, 2015. We will use descriptive statistics to examine the cross-sectional data from this population. We will use linear regression models adjusted for race, age, sex, housing status and education level to determine the relationship between motivation scores and length of stay and RTP completion status. Additional analyses will examine the relationship between motivational scores and recidivism. **Results:** Preliminary data indicate that 1,517 individual RTP encounters occurred during the study period, with a program completion rate of 31%. All individuals completed the TCU MOTform. The study is currently under way, with final results pending that will be available by the time of the poster presentation. **Discussion:** Thus far, motivational scores have not been used to inform the important issue of which individuals in a diverse population are most likely to succeed in residential treatment facilities. Given the national prevalence of SUDs there is an ongoing need to efficiently manage changing resource availability for substance use disorder treatment. A better understanding of predictors that maximize the potential for client success would have broad policy and practice implications.

NO. 82

REMINISCENCE THERAPY IN A PATIENT WITH DEPRESSION FOLLOWING GLIOBLASTOMA MULTIFORME RESECTION

Lead Author: Lindsay Works, D.O.
Co-Author(s): Matthew Richter, M.D., Enoch Barrios, M.D.

SUMMARY:
Background: Reminiscence therapy (RT) is an effective intervention used to enhance self-esteem and decrease depression while providing comfort in demented patients. The therapy is known to increase well-being and decrease problem behaviors in nursing home patients with Alzheimer's. However, no current literature documents the application of this therapy in patients with similar cognitive deficits due to alternative organic causes. RT emphasizes positive historical events, sharing of experiences, memorabilia and simulated presence in an attempt to help patients focus on pleasant thoughts and memories, resulting in improved emotions, behavior and cognitive ability. **Case:** The patient is a 63-year-old male who initially presented to a primary care

manager in Germany for workup of increasing headaches and nausea for two weeks. He had no prior psychiatric history and no significant past medical history. Magnetic resonance imaging identified a large left frontal cystic lesion causing a mass effect on the left frontal horn. The patient was medically evacuated to a tertiary medical center in Germany, where he underwent left frontotemporal craniotomy on June 30, 2015 for removal of glioblastoma multiforme. Once the patient was stabilized, he was again medically evacuated to a medical center in the United States for continued treatment of glioblastoma multiforme, including concurrent Temodar and radiation. Following the resection, the patient had profound cognitive deficits with obvious impairments in speech, motor skills and memory. As the patient's insight improved, he began to withdraw from the treatment team, becoming tearful upon interview, and concerns were raised of whether or not to initiate antidepressant therapy. Reminiscence therapy was trialed instead of antidepressants, with a positive response. Two months following the resection, the patient has remained off antidepressants with improved affect and cognitive ability through reminiscence therapy. **Discussion:** The novel application of RT in a patient with glioblastoma multiforme appears to have similar beneficial effects as when applied to Alzheimer's patients. This patient's presentation was initially challenging due to profound cognitive deficits, including aphasia, psychomotor retardation and impaired long- and short-term memory. As the patient was developing improved insight into cognitive deficits, there was an increase in anxiety and emotional liability. Once RT was initiated, the patient had noticeable positive responses, including improved physical therapy/occupational therapy participation, gains in self-care and more involved interviews. The patient displayed improved affect and better control of his emotions, as well as improved executive function as demonstrated through formal cognitive assessment.

NO. 83

PENTOSAN POLYSULFATE SODIUM SPECIFICALLY REDUCED PLASMA LEVEL OF SOLUBLE P-SELECTIN IN A PATIENT WITH SCHIZOAFFECTIVE DISORDER

Lead Author: Fang Yang, M.D., Ph.D.
Co-Author(s): Olaoluwa O. Okusaga

SUMMARY:

Background: Plasma levels of soluble P-selectin are significantly increased in patients with acute psychosis. Elevated soluble P-selectin levels in patients with schizophrenia may represent immune system dysregulation and may be involved in the spread of inflammation from the periphery to the brain, thereby worsening the neuroinflammation in schizophrenia. We hypothesized that blocking P-selectin may reduce neuroinflammation and improve psychotic symptoms and cognitive function in patients with schizophrenia. As P-selectin blockade has never been studied in schizophrenia, we obtained IRB approval and administered pentosan polysulfate sodium (PPS), a heparin-like molecule with a potent P-selectin-blocking effect, to a patient with schizoaffective disorder. **Methods:** The patient was a 19-year-old female with a diagnosis of schizoaffective disorder (diagnosed by the Structured Clinical Interview for the *DSM-5*). The patient received PPS 300mg/d orally for two weeks as an adjunctive medication to her other psychotropic medications. We measured plasma C-reactive protein (CRP) and soluble P-selectin at baseline and after two weeks on PPS. **Results:** Soluble P-selectin levels reduced from 123.8ng/ml at baseline to 97.2ng/ml after administration of PPS for two weeks. However, the level of CRP did not decrease (baseline: 100.9pg/ml, after two weeks on PPS: 228.1pg/ml). **Conclusion:** Our preliminary data suggest that PPS engaged its target because it specifically reduced the level of soluble P-selectin while failing to reduce the level of CRP. Randomized controlled studies are required to evaluate the potential efficacy of PPS as an adjunctive therapeutic agent for treating symptoms of schizophrenia.

NO. 84

LONGITUDINAL IMPACT OF CURRENT IRRITABILITY IN BIPOLAR DISORDER

Lead Author: Laura D. Yuen, B.A.
Co-Author(s): Saloni Shah, B.S., Shefali Miller, M.D., Po W. Wang, M.D., Farnaz Hooshmand, M.D., Terence A. Ketter, M.D.

SUMMARY:

Background: Current irritability is associated with greater retrospective and current bipolar disorder (BD) illness severity; however, less is known about prospective longitudinal implications of irritability. This study examines relationships between current irritability and depressive recurrence as well as recovery from depression in BD. **Methods:** Outpatients referred to the Stanford BD Clinic during 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD)

Affective Disorders Evaluation at baseline and with the Clinical Monitoring Form during follow-up for up to two years. Prevalence and clinical correlates of any current irritability in depressed and recovered (euthymic at least eight weeks) BD patients were assessed. Kaplan-Meier survival analyses assessed times to depressive recurrence and recovery from depression in patients with and without current irritability, and Cox Proportional Hazard regression analyses assessed covariate effects. **Results:** Among 105 currently recovered BD outpatients, 36.2% had current irritability. Recovered patients with versus without current irritability had significantly higher rates of 15 unfavorable illness characteristics (only three of which significantly contributed to shorter time to recurrence of depression), higher depressive recurrence rate (47.4% vs. 23.9%, p=0.02) and shorter time to depressive recurrence (log-rank p=0.02), with the latter becoming nonsignificant when controlling for lifetime history of anxiety disorder (HR=3.9, p=0.002), history of psychosis (HR=0.38, p=0.02) and prior-year rapid cycling (HR=2.6, p<0.06). Among 153 currently depressed patients, 68.6% had current irritability. Depressed patients with versus without current irritability had significantly higher rates of nine unfavorable demographic/illness characteristics (none of which significantly contributed to longer time to recovery from depression), a non-significantly lower recovery rate from depression (55.2% vs. 64.6%, p=0.3) and longer time to recovery from depression (log-rank p=0.03). This study has limited generalizability beyond our predominately white, female, educated, insured American BD specialty clinic sample. **Conclusion:** In this longitudinal, two-year study, current irritability was associated with faster depressive recurrence (potentially driven by lifetime history of anxiety disorder and prior-year rapid cycling and attenuated by history of psychosis) and delayed recovery from depression in BD. Treatment studies targeting irritability may further elucidate the role of irritability in depressive recurrence and recovery.

NO. 85

ALCOHOL AND DRUG DEPENDENCE IN TERMS OF ATTACHMENTS: POSSIBLE DEVELOPMENTAL PRECURSORS

Lead Author: Dana Zeid
Co-Author(s): Joshua Carter, M.A., Marc A. Lindberg, Ph.D.

SUMMARY:

These studies tested which etiological treatment issues drug and alcohol dependence share. Study 1 tested for differences and similarities between alcohol and drug dependence in terms of attachment patterns and clinical issues. Participants from an inpatient alcohol treatment center, a methadone maintenance clinic and matched controls were compared on the 29 scales of the Attachment and Clinical Issues Questionnaire (ACIQ). Study 2 sampled a substantially different population, using different operational definitions of substance dependence, including other measures found to be sensitive in predicting who develops addictions. Study 1's results indicated that, although the recovering populations differed substantially from the non-dependent controls, they did not differ from one another on a number of the 29 scales, suggesting that the two addictions are similar in terms of attachments and clinical issues. Study 2 converged on study 1, showing convergent and concurrent rather than discriminate evidence for the CAGE and DCAGE on diagnostically important measures. The combined results suggest that it would be more fruitful to examine unique ACIQ profiles than the type of substance abused when determining psychosocial treatment issues. In other words, the underlying etiologies of these disorders may provide a more focused area of treatment for those experiencing substance use disorders than traditional methods.

NO. 86

DEVELOPMENT OF THE WORKING MEMORY TEST BATTERY IN CHINESE OLDER ADULTS

Lead Author: Layan Zhang, M.B.B.S., M.S.
Co-Author(s): Shijie Zhou

SUMMARY:

Background: Working memory involves the temporary storage and manipulation of information, which is necessary for a wide range of complex cognitive activities. Researchers have consistently shown age-related declines in all working memory-related domains such as verbal working memory, visuospatial working memory, executive function, reasoning and processing speed. Therefore, it is important to develop a comprehensive tool to assess the working memory function, especially in the population of older adults, given their increased comorbidity with cognitive dysfunction. **Objective:** Develop a Working Memory Test Battery (WMTB) and evaluate its psychometric properties in the Chinese older adult population. **Methods:** This was

an instrument development study. The WMTB consists of eight subscales within four dimensions: verbal working memory (Digits Ordering Test and Backward Digit Recall), visuospatial working memory (Space Ordering Test and Backward Space Recall), executive function (Modified Stroop Task and Digit Deletion Task) and processing speed (Reading Speed Test and Counting Speed Test). 200 healthy participants (99 men and 101 women, mean age 61.75±8.55) were administrated the test battery. The test-retest reliability was assessed in 24 participants (mean age 62.71±7.18) within a two-week interval. Forty-seven participants (mean age 60.35±7.08) were randomly selected to perform four standardized measures (Pattern Series Test, Figure Sorting Test, Digit Series Test and Mathematics Test from the Chinese Revised Wechsler Adults Intelligent Scale) to test for the construct validity. **Results:** Paired-samples t-tests provided proof for the internal reliability. Except for Backward Space Recall, the correlation coefficients for all the subscales were significant ($r=0.595–0.888$, $p<0.01$). The Pearson's correlation coefficients between subscales and exploratory factor analysis demonstrated evidence for the construct validity and concurrent validity. **Conclusion:** The Working Memory Test Battery appears to be a psychometrically robust measure of working memory and is capable of providing a fine-grained theoretical analysis of working memory function in the Chinese older adult population.

NO. 87

CANINE-ASSISTED GROUP PSYCHOTHERAPY FOR HOSPITALIZED PSYCHIATRIC PATIENTS WITH MOOD AND PSYCHOTIC DISORDERS: A PILOT STUDY

Lead Author: Brittany B. Albright, M.D., M.P.H.
Co-Author(s): Sandra B. Barker, Ph.D., Christine M. Shubert, Ph.D., Margaret Spivey, M.S., R.N., Charlene B. Moore, M.S., R.N., Georgia Rosenblatt, Lisa Davis, M.Ed., R.N.-B.C.

SUMMARY:

Background: Canine-assisted therapy involving trained therapy dogs and volunteer handlers is commonly offered to patients in psychiatric hospitals and has been shown to acutely reduce the anxiety and fear levels of hospitalized patients. However, there are no studies that assess if canine-assisted group therapy led by a trained mental health professional provides additional mental health benefits among hospitalized patients over traditional group therapy. The objective of this study was to determine if a single session of canine-assisted group psychotherapy led by a mental health professional would reduce psychiatric inpatients' anxiety, fear and stress levels and improve mood compared to group psychotherapy without a canine present. **Methods:** All patients hospitalized on an acute psychiatric service in an academic medical center during the three-week study period were screened for eligibility. Study subjects included 65 patients who consented to participate. A pre-post crossover design with block randomization to condition order was used to compare the effects of a single canine-assisted stress management group therapy session with those of a stress management group therapy session without a dog. Before and after participating in the two conditions conducted on the same day (in the morning and late afternoon), subjects self-reported their perceived mood, stress, anxiety and fear levels using validated visual analog scales and their mood on the Masiak Faces Scale. Using the same scales, nurses rated subjects' mood, stress, anxiety and fear before and after each group. **Results:** Subjects included 45 females (69.2%) and 20 males (30.8%). Mean age was 44.6 (SD=16.7). Most subjects had a mood disorder (n=52, 80%) and no psychotic disorder (n=41, 63.1%). Many (60%) subjects failed to complete both study conditions (five left early, nine dropped out, eight were discharged and 17 had incomplete records for other reasons including declining participation in the group without the dog). Of those available to participate in a group, almost 90% came to the canine therapy group, while 75% came to the control group. No significant differences were found for any of the patient ratings. Nurse ratings indicated a significant reduction in patient fear ($p=0.0074$) and improvement in mood ($p<0.001$) after the canine group therapy. **Conclusion:** Canine-assisted group psychotherapy may increase patient attendance and improve patient fear and mood as perceived by nursing staff, but not patients. These pilot results warrant further research on the benefit of canine therapy groups for psychiatric inpatients with mood and psychotic disorders.

NO. 88

POLYCYSTIC OVARIAN SYNDROME IN PATIENTS PRESENTING TO MENTAL HEALTH: INCIDENCE, NATURAL HISTORY AND TREATMENT

Lead Author: Eric Meyer II, M.D.

SUMMARY:

Background: Polycystic ovarian syndrome (PCOS) affects 18% of women and is secondary to ovarian

androgen excess. Although over 57% of PCOS patients meet criteria for a mental health condition, less than half are identified. Conversely, it is not well known how many women with mental health symptoms meet criteria for PCOS. Treatment for these patients is limited, as first-line agents (metformin, SSRIs) may not be effective. This study describes the epidemiology of PCOS presenting as a mental health condition while illustrating the potential benefits of spironolactone, an androgen antagonist. **Methods:** A 12-month chart review of all 18–50-year-old women diagnosed with PCOS upon intake at a mental health clinic was conducted. Diagnosis was made using a validated clinical tool. Number of years patients experienced depression, years since first mental health diagnosis, number of failed psychotropic trials, previous diagnosis of PCOS, previous treatment with metformin and perceived response to metformin (decreased depression) were noted. When patients were started on spironolactone, pre-/post-Patient Health Questionnaire 9 (PHQ-9) scores were compared. **Results:** Of 57 unique female patients, six were diagnosed with PCOS on intake (10.5%). Depressive symptoms had been present for an average of 15 years (SD=5.06), with first mental health diagnosis 6.33 years (SD=4.03) prior to intake. Between one and five psychotropic medication trials had failed to treat their symptoms. Two patients had been diagnosed with PCOS prior to intake. Both had been previously treated with metformin, with no perceived reduction in depression. All six patients elected to start spironolactone. Three patients opted to continue treatment with an SSRI. In the initial three months of treatment, PHQ-9 scores decreased by 8.86 (p=0.040, 95% CI [0.55, 15.12]), indicating a drop from severe to mild depression. **Discussion:** Although severely limited in design and power, this review exposes the potential that a large number of female mental health patients may be suffering due to PCOS. The review also supports findings that spironolactone may be an effective treatment for mental health symptoms associated with PCOS. **Conclusion:** PCOS represents an important etiology of mental health symptoms in women. Misdiagnosis can lead to poor outcomes. Increased screening and improved understanding of treatment is needed.

NEW RESEARCH POSTER 1

NO. 1

MESIAL TEMPORAL LOBE RESECTION AND IMPULSE CONTROL DYSFUNCTION IN A 33-YEAR-OLD FEMALE

Poster Presenter:Matthew Richter, M.D.
Lead Author: Maria E. Aguilar, M.D.
Co-Author(s): Lobna Ibrahim

SUMMARY:
Background: The mesiotemporal lobe is a wide area of the brain that covers many vital areas, including the amygdala, polar cortex, entorhinal cortex, hippocampus and parahippocampus. Lesions in this area result in diverse neurological injuries such as complete anterograde amnesia in the famous case of H.M., to new-onset psychosis as a result of multiple sclerosis disease progression. In this case report, we detail acute behavioral changes, including increasing impulsivity, in a 33-year-old female shortly following resection of brain mass. **Case:** A 33-year-old female was involved in a swimming accident in Eastern Africa, which caused radicular pain. The patient was subsequently evaluated with an MRI of her shoulder and c-spine to evaluate for nerve compression. The MRI showed an incidental non-enhancing multi-cystic lesion measuring roughly 1.0x1.6x1.5cm. The patient complains of short-term memory loss. She denies ever having verified seizures, but has noticed intermittent, transient visual changes that she describes as “involuntarily closing the right eye as the left eye rolls back." Her right mesiotemporal lobe was resected, with pathology demonstrating dysembryoplastic neuroepithelial tumor. She was discharged from the hospital awaiting pathology results, but was noted by her caretakers to be exhibiting bizarre, uninhibited behavior, most specifically drinking in excess, which led to an arrest. Her caretaker stated he was unable to control the patient, and she would state she was “going downstairs to get dessert” but would then consume an entire wine bottle and be difficult to stop, despite receiving strict instructions from neurosurgery not to drink. The patient was admitted to an inpatient psychiatry ward, where she reported intermittent symptoms of left arm paresthesia and left-sided facial droop. None of these events were directly observed, and she had only minimal events without facial droop while in line of sight. EEG, including multi-day video EEG, revealed no abnormalities. Repeat head MRI showed no evidence of acute thrombosis or encephalopathy. **Discussion:** Amygdala volume correlates with the number of social contacts and social networks a person maintains, suggesting it is important in regulating proper social interactions. In addition, animal studies have demonstrated increased anxiety response in the amygdala and hippocampus,

particularly in females, suggesting that unilateral removal may lead to decreased anxiety and subsequent disregard for normal social cues or fear of repercussions for untoward actions. This case study demonstrates a lack of social concern for actions leading to impulsive behavior that was minimally distressing to the patient but eminently concerning to her caregivers. The patient also displayed concurrent increased anxiety in relation to her medical diagnosis, suggesting alternate pathways or unilaterality for differing types of fear. Further investigation into specific fear emotional pathways is warranted.

NO. 2

GENERAL MEDICAL CONDITIONS OCCURRING BEFORE SUICIDE: A CASE-CONTROL STUDY

Lead Author: Brian K. Ahmedani, Ph.D., M.S.W.
Co-Author(s): Yong Hu, Nicole Zeld, Deepak Prabhakar, Edward L. Peterson, L. Keoki Williams, Rebecca Rossom, Frances Lynch, Samuel Hubley, Christine Lu, Beth E. Waitzfelder, Ashli Owen-Smith, Gregory E. Simon

SUMMARY:

Background: Suicide is among the leading causes of death and years of life lost in the United States, making it a major public health concern. To date, preexisting mental health conditions and suicide attempts are among the only known clinical risk factors for suicide mortality within the U.S. general population. Nonetheless, a recent study from the Mental Health Research Network (MHRN) found that only half of individuals had a recorded psychiatric diagnosis prior to suicide. While data from the Veterans Health Administration and from other countries indicate that several general medical conditions (including back pain) are independently associated with an increased risk for suicide, there remains little evidence from the U.S. This study compared the occurrence of a series of common medical diagnoses in the year before suicide to a matched sample of U.S. health care users. **Methods:** The sample included a total of 2,635 individuals who died by suicide between 2000 and 2013 (cases) and 263,501 matched individuals (controls); all were members of eight large MHRN-affiliated health care systems that are all located within different states across the U.S. Suicide mortality was captured using ICD-10 codes (X60-X84, Y87.0) within government mortality records and matched to all health system records. ICD-9 codes extracted from the MHRN's Virtual Data Warehouse (a combination of electronic medical record and insurance claims data) were used to identify 24 defined medical diagnoses occurring within the one-year period prior to the index date—the date of suicide for cases and the matched date for controls. Logistic regression analyses were used to compare the proportion of cases and controls who were diagnosed with each medical condition in the year before the index date. **Results:** Among medical conditions, neurologic disorders, such as traumatic brain injury (aOR=10.07, p<0.001), were very strongly associated with suicide death but still had relatively low prevalence in suicide decedents. Other chronic conditions, such as back pain (aOR=1.79, p<0.001) and COPD (aOR=1.91, p<0.001), were moderately associated with suicide death but were more prevalent among suicide decedents. Mental health and substance use disorders were both strongly associated with suicide death and relatively prevalent among suicide decedents. **Conclusion:** This study presents the first available large-scale U.S. general population health care data on the risk of suicide associated with major medical conditions, independent of mental health and substance use disorders. Limitations include that all individuals had health insurance and not all U.S. states were represented. Nevertheless, these data provide important public health information on suicide and help inform suicide prevention strategies in clinical settings.

NO. 3

USE OF LITHIUM IN INPATIENTS WITH ACUTE BIPOLAR MANIA

Lead Author: Cana Aksoy Poyraz, M.D.
Co-Author(s): ArmaÄŸan ízdemir, Nazife Gamze Usta SaÄŸlam, BurÃ§ Ã‡aÄŸrÄ± Poyraz, Semra Enginkaya, Nesrin Tomruk

SUMMARY:

Acute mania usually requires hospital admission with the aim of achieving rapid symptom control and preventing harmful behavior to self and others. This study investigated the clinical characteristics of patients who were started on lithium and also to analyze the use of lithium in acutely manic inpatients. This study was a retrospective review of patients with manic episode admitted to BakÄ±rköy Mazhar Osman Mental Health and Neurological Diseases Education and Research Hospital. Length of stay, medication data, serum levels and adverse effects were recorded for patients who were started lithium treatment within average of five days of admission (n=100). Psychotic features were present

in 82% of the sample, severe harmful behavior in 48% and past attempted suicide in 28.4%. 10.1% of patients were hospitalized after a recent suicide attempt, and 18.2% had suicidal ideation at the time of admission. The average number of previous hospitalizations was four. In this sample, 63.5% of patients had previously used lithium; in 83 patients, lithium was initiated with 900–1,200mg, whereas the remaining patients received 600mg on the first day of lithium treatment. The maximum daily dose, reached in an average of 10 days, was 1,145.45mg (SD=174.07) in 55 patients, whereas 45 patients were discharged with the dose given on the first day of lithium treatment. The average time after starting treatment until the first recorded serum level was five days. The average serum level reached was 0.58mEq/L (SD=0.18) and was available for the total sample, whereas it was raised to 0.7mEq/L (SD=0.16) at discharge with an average daily dose of 1,068mg (SD=196.88) and was measured in 86 patients. In 26 of admissions, one adverse effect was recorded that could have been related to lithium treatment—19 patients reported gastrointestinal side effects, four tremor, two headache and one dizziness). Adverse events did not lead to discontinuation of the drug. Along with lithium, 94 patients received antipsychotics. **Conclusion:** Number of previous hospitalizations, the prevalence of psychotic features, and past and current homicidal and suicidal ideation/attempt were high, indicating a severe illness course in this sample of acutely manic inpatients who were treated with lithium. The literature supports that rapidly attained high serum levels are associated with positive outcomes, yet in this sample, clinicians did not prefer a load strategy. Nearly half of the patients were discharged with the dose given on the first day of lithium treatment, whereas the remaining patients had a further increase of 300–600mg in 10 days based on serum concentration and side effects. This strategy did not cause significant adverse effects in this population.

NO. 4

ASSOCIATION BETWEEN NEUROTICISM AND FUTURE OCCURRENCE OF CARDIOVASCULAR DISEASES AMONG DEPRESSED PERSONS IN A SWEDISH POPULATION

Lead Author: Aysha Almas, M.B.B.S., M.Sc.
Co-Author(s): Yvonne Forsell, M.D., Ph.D., Romaina Iqbal, Ph.D., M.P.H., M.Sc., Jette Moller, Ph.D., M.P.H.

SUMMARY:

Background: The relationship between neuroticism, depression and cardiovascular disease (CVD) is complex and has not been well-studied. The aim of this study was to assess the effect of neuroticism on the association between depression and cardiovascular disease. **Methods:** This study used data from a longitudinal cohort study on mental health, work and relations among adults (20–64 years) with a total of 10,443 individuals from Stockholm, Sweden. Depression was assessed using Major Depression Inventory (MDI) and neuroticism using the Swedish Scale of Personality (SSP). Outcomes of cardiovascular disease were register-based as well as self-reported. **Results:** In this study, both depression (OR 1.9 [95%CI 1.4, 2.5]) and the upper quartile (Q4) of neuroticism (OR 2.0 [95%CI 1.6-2.5]) were associated with increased risk of CVD. Analyzing the combined effect of depression and neuroticism on future risk of CVD revealed that OR ranged from 2.2 to 2.3 in those who were depressed and was in lower (Q1 or Q2) to upper (Q4) quartiles of neuroticism after adjusting for age and gender. Similar associations were seen after further adjustment for socioeconomic status, history of CVD and lifestyle factors. **Conclusion:** Depression was independently associated with future risk of CVD, regardless of the degree of neuroticism present. There was no interaction between depression and neuroticism in predicting future risk of CVD. Further research is required to follow neuroticism with and without significant vascular risk factors for depression and later CVD to confirm the findings

NO. 5

DEPRESSION IN SAUDI PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A MULTICENTER STUDY

Lead Author: Abdulrahman Alwahibi, M.D.
Co-Author(s): Ibrahim A. Al-Homood, Narges E. Omran, Maha Aldosoghy, Amal Alharthy, Ghassan Al Johani

SUMMARY:

Neuropsychiatric disorders, including depression, are common clinical manifestations of systemic lupus erythematosus (SLE). Depression in SLE patients is underrecognized. although it is a treatable clinical feature. This study is a multicenter cross-sectional study conducted in rheumatology clinics to determine the prevalence of depression and the relationship between depression and SLE disease characteristics in terms of age, gender, disease duration and severity, and steroid treatment in Saudi patients with SLE. Sixty-eight SLE patients (64

women, four men) were studied using the validated Arabic Beck Depression Inventory (BDI) score to estimate the prevalence of depression. Forty-six (67.6%) patients achieved scores indicating depression, of whom only four patients (8.7%) were receiving antidepressant treatments. Higher depression prevalence was related to being treated with steroids (p=0.046). Our study revealed a high prevalence of depression in Saudi SLE patients, and most of our patients were not adequately treated, suggesting inadequate recognition and treatment of depression in SLE.

NO. 6
WITHDRAWN

NO. 7
CHRONOBIOLOGICAL CHARACTERISTICS OF BIPOLAR AND RECURRENT DEPRESSION
Lead Author: Sergejus Andruskevicius, M.D.
Co-Author(s): Violeta Meiner, Giedre Vindasiene

SUMMARY:
Objective: Study circadian rhythms under the parameters of spectral analysis of heart rate variability in the treatment of bipolar and recurrent depression. **Methods:** Sixty patients have been studied (ICD-10: F 31.3–31.4, F 33.0–33.2) with a mean age of 44.2±10.8 years. The patients have been divided into two groups: Group 1 consisted of 28 patients with recurrent depressive disorder, and Group 2 included 32 patients with bipolar affective disorder. Assessing the autonomous regulation of the cardiovascular system, the spectral analysis of heart rate variability was applied. The power spectrum density (PSD) of low frequency (LF) and high frequency (HF) ranges was established. The patients were examined at 1 a.m., 7 a.m., 1 p.m. and 7 p.m. prior to the beginning of treatment, at the end of the first week of treatment and at discharge from the hospital. In order to determine the daily curve of changes in the indices under investigation, the control group (15 mentally healthy people with a mean age of 44.9±9.3 years) was examined at 1 a.m., 4 a.m., 7 a.m., 9 a.m., 11 a.m., 1 p.m., 3 p.m., 4 p.m., 5 p.m. and 7 p.m. in summer. **Results:** Prior to therapy desynchronization of the circadian rhythms, the parameters of spectral analysis of heart rate variability and the "sleep-wake" rhythm were observed. This manifested itself in the phase shift of the circadian rhythms within the parameters under study toward an earlier time of the day. Prior to the beginning of treatment, desynchronization of the circadian rhythms under study was more pronounced in the night/morning hours in Group 1 and in the day/evening hours in Group 2. This difference persisted in the course of positive therapeutic dynamics. **Conclusion:** Depressive patients diagnosed with bipolar affective disorder had more pronounced circadian disorders in the day/evening hours. Depressive patients diagnosed with recurrent depressive disorder had more pronounced circadian disorders in the night/morning hours.

NO. 8
HOW DO ANGER EXPRESSED INWARD AND ANGER EXPRESSED OUTWARD DIFFERENTIALLY RELATE TO DEPRESSION, IMPULSIVITY AND SUICIDE RISK?
Lead Author: Firouz Ardalan, B.A.
Co-Author(s): Thachell Tanis, Laura Derubeis, Kahlen Kim, Zimri Yaseen, M.D., Igor Galynker, M.D., Ph.D., Lisa Cohen, Ph.D.

SUMMARY:
Background: Early psychoanalytic theory has posited a relationship between internalized anger and depression. However, there is a need for more empirical research into how both internalized and externalized anger correlate with depression and how these relationships might contribute to suicide risk. In this study, we test a model that anger expressed inward is associated with depression, while anger expressed outward is associated with impulsivity, and that both impulsivity and depression are predictive of suicide risk. **Methods:** 147 patients were selected from a larger study on various aspects of psychopathology in an inpatient sample. All subjects were recruited from an inpatient psychiatric unit in a large urban hospital. Data were collected and analyzed from three self-report measures and one clinical interview. The scales used were the Barratt Impulsivity Scale (BIS), the State Trait Anger Expression Inventory (STAXI-2), the Beck Depression Inventory (BDI) and the Columbia Suicide Severity Rating Scale (CSSRS). Path analysis was conducted with lifetime suicide ideation as the dependent variable, impulsivity and depression as mediating variables, and anger expressed inward and outward and control of anger expressed inward and outward as the four independent variables. **Results:** Results showed independent associations between depression and both anger expressed inward ($\beta=0.359$, $p<0.001$) and control of anger expressed inward ($\beta=-0.248$, $p=0.014$). Independent associations were also found between impulsivity

and anger expressed outward (β=0.179, p=0.027), control of anger expressed outward (β=−0.301, p=0.007) and anger expressed inward (β=0.232, p=0.002). Depression and impulsivity were also independently related to one another (β=0.252, p=0.001). Further, the two mediating variables were both independently associated with lifetime suicide ideation (β=0.247, p=0.011 and β=0.283, p=0.004, respectively). There were no other significant associations. The mediation effect of depression on the path from anger expressed inward to suicidal ideation was significant (Aroian test=4.66, p<0.001), as was the mediation effect of impulsivity on the path from control of anger expressed outward to suicidal ideation (Aroian test=3.55, p<0.001). **Discussion:** Our results suggest a path from anger expressed inward to depression and from anger expressed outward to impulsivity, and then from both depression and impulsivity to suicidal ideation. These results support the distinct but interrelated roles of anger expressed inward and anger expressed outward in depression and suicide ideation. Thus, in assessing suicide risk, consideration of the level of patients' experienced anger, their characteristic mode of anger expression and the capacity to control anger expression may well be indicated.

NO. 9

DEMOGRAPHIC DIFFERENCES IN DISRUPTIVE MOOD DYSREGULATION DISORDER (DMDD) SYMPTOMS IN PSYCHIATRIC AND GENERAL POPULATION SAMPLES

Lead Author: Raman Baweja, M.D., M.S.
Co-Author(s): S. D. Mayes, S. L. Calhoun, J. Waxmonsky, C. Kokotovich, R. Lockridge, E. O. Bixler

SUMMARY:
Background: The new *DSM-5* disruptive mood dysregulation disorder (DMDD) diagnosis has generated controversy because of limited research and its questionable validity as a disorder distinct from oppositional defiant disorder (ODD). No studies have investigated DMDD symptoms (irritable or angry mood and temper outbursts) and demographics in general population and psychiatric samples. **Methods:** Maternal ratings of DMDD symptoms and their relationship to diagnoses, age, gender, IQ, race and parent occupation were analyzed in general population (n=665, 6–12 years, IQ>70) and psychiatric (n=2,256, 2–16 years, IQ=9–149) samples. **Results:** In the general population sample, 9% had DMDD symptoms. In the psychiatric sample, DMDD symptoms were more common in preschool (46%) than school-age (36%) children. Male gender, nonprofessional parents and high-functioning autism were associated with increasing DMDD symptoms in school-age children. However, demographics accounted for only three percent of the variance, suggesting that DMDD symptoms are primarily biological and not the result of environmental and psychosocial circumstances. When ODD and other diagnoses were considered with demographics in regression analyses, only ODD was significant. **Conclusion:** Our findings support the *DSM-5* stipulation that DMDD not be diagnosed under age six (because DMDD symptoms are common in preschoolers) and the *DSM-5* statement that males are more likely to have DMDD symptoms than females (with a ratio of 4:1 in our study, similar to that for ODD, ADHD-C and autism). Almost all children with DMDD symptoms had ODD, suggesting that DMDD cannot be meaningfully differentiated from ODD and is not a separate and unique diagnosis.

NO. 10

COMPARING CAREGIVER BURDEN IN SCHIZOPHRENIA, BIPOLAR DISORDER AND MAJOR DEPRESSION

Poster Presenter:Saagar Seth, B.S.
Lead Author: Rimal B. Bera, M.D.

SUMMARY:
Caregivers of patients with mental illness have a tremendous role and often bear an emotional burden for the care they provide. This study compares the level of caregiver burden between schizophrenia, bipolar disorder and major depression. The study instrument used for assessing caregiver burden is the Zarit Burden Interview (ZBI). The ZBI consists of a 21-item scale questionnaire, which assesses caregivers' perceptions of the emotional, physical, social and financial aspects associated with caring for the patient. This scale has been widely used when studying caregiver burden in Alzheimer's disease, but there have not been any formal evaluations in differences in caregiver burden across psychiatric diagnoses. It is well known that the greater the burden on caregivers, the greater chance of negative outcomes on the psychiatric patient. There is clear evidence that supports that caregiver intervention strategies, such as psychoeducation, social support and access to mental health resources, have a positive impact on both caregiver well-being and patient outcome. In our study, caregiver burden was found to be greater

within the psychotic illnesses as compared to the two mood disorders (MDD and bipolar disorder) that were evaluated. We will discuss strategies that will further benefit caregivers in their role of taking care of patients with these chronic illnesses. In addition, we will summarize how these strategies can be used by the practitioner.

NO. 11

THE EFFECTS OF LONG-ACTING INJECTABLES ON POLYPHARMACY

Lead Author: Niketa Parikh, B.S.
Co-Author(s): Niki Parekh

SUMMARY:

Long-acting injectables (LAIs) are a type of pharmacological strategy intended to solve the issue of patient noncompliance. Despite the increased cost associated with LAIs compared to their oral equivalents, their use continues to grow in the United States because their increased reliability leads to a decreased rate of relapse and overall reduction in cost of care. This is a retrospective observational study in an outpatient mental health clinic on schizophrenic patients currently on long-acting injectables in order to determine if the number of psychotropic medications decreased after the introduction of LAIs. The LAIs studied were aripiprazole, paliperidone, haloperidol, fluphenazine decanoate and risperidone. This study was performed in order to consider increased use of LAIs in the future. Our initial findings did not find a significant change in the number of psychotropic drugs from the date of first LAI administration to the most current date. A decrease in polypharmacy has been found in previous studies regarding clozapine. In these studies, there is a clear decrease in the total number of psychotropic drugs after the administration of clozapine. We will perform a further subanalysis to see if there was an increase or decrease in certain classes of drugs. We will continue to follow this group to see if there are changes in their polypharmacy as they remain on LAIs for a longer period of time.

NO. 12

DEVELOPMENT OF AN EDUCATIONAL RESOURCE AND MODEL CURRICULUM FOR PSYCHIATRIC TRAINEES ON USE OF PSYCHOTROPIC MEDICATIONS DURING PREGNANCY AND LACTATION

Poster Presenter:Sheema Khan, M.D.
Lead Author: Jordan Brown, M.D.
Co-Author(s): Yanmin Zhu, B.A., Jacqueline A. Hobbs, M.D., Ph.D.

SUMMARY:

Objective: Develop a comprehensive educational resource and, ultimately, a model curriculum on the use of psychotropic medications in pregnancy and lactation that will be appropriate and useful for psychiatric residents and fellows. **Background:** To date, evidence on the risks of psychotropic medication use during pregnancy and lactation is limited and can be very confusing for psychiatric residents and fellows. A comprehensive educational resource is needed to guide trainees to weigh the risks and benefits of their use during pregnancy and lactation. Our ultimate goal is to develop a model curriculum that can be used in any program to train psychiatric residents and fellows on the proper and safe use of psychotropics during pregnancy, the postpartum period and lactation. We felt that the first step in this process was to develop 1) A comprehensive review of psychotropic medications during these critical periods; 2) A database of our findings; and 3) Tools for ease of use by trainees to access this information. **Methods:** An extensive literature search from online sources including PubMed and Google Scholar with keywords “psychiatric medication AND pregnancy” and “psychiatric medication AND lactation” was conducted. The search was also conducted with each drug category AND pregnancy, e.g.: antidepressants, antipsychotics, anticonvulsants, bipolar, sleep and anxiety medication AND pregnancy. Other online sources, e.g., UpToDate, Clinical Pharmacology and respected psychopharmacology textbooks, were referred to as well. We identified more than 130 medications that are currently used to treat psychiatric illnesses and collected evidence on the risks associated with their use during pregnancy and lactation. **Results:** Based on the evidence we compiled, we have created a comprehensive database as well as flashcards for each medication, including details on drug class; daily dose; effects on weight gain, pregnancy and lactation; etc. Examples will be provided. We found that all categories of psychotropic medications are widely used during pregnancy and lactation. To our knowledge, many of these medications are relatively contraindicated during pregnancy; all the drugs cross the placenta and many enter the breast milk. We have also found a significant lack of research regarding psychotropic medications in breastfeeding mothers. **Conclusion:** We have created a focused, comprehensive and

easy-to-use database with accompanying flashcards for residents and fellows to aid learning and clinical decision making in treating mental illness in pregnant and lactating women. There still remains much needed research in this population with regard to treatments, potential for side effects on mother/newborn and transmission in breast milk. We have created the first set of resources and the foundation for the development of a model curriculum on the use of psychotropic medications in pregnancy and lactation.

NO. 13

THE RELATIONSHIP BETWEEN ADHD AND SUBSTANCE USE DISORDERS AMONG ADOLESCENTS IN A RESIDENTIAL SETTING

Lead Author: Amy B. Carnall, D.N.P., N.P.

SUMMARY:

Substance use disorders (SUD) are a public health epidemic without any proven successful evidence-based treatment protocols. Treatment modalities can be challenging and represent an enormous burden to the psychiatric community due to the prevalent comorbidities and mortality that is often associated with substance use. Adolescents are impressionable and resistant to societal norms. Therefore, adolescents often participate in risky behaviors, accounting for high rates of substance use. Comorbidities that couple substance use are often the driving force for adolescent substance misuse. For example, ADHD is an identified comorbid psychiatric diagnosis for the purposes of this project. Additionally, the implications of ADHD on the adolescent diagnosed with a substance use disorder can lead to challenges within residential placement regarding effective treatment modalities. Therefore, the purpose of this project was to evaluate the usefulness of a standardized screening tool to detect underdiagnosed or undiagnosed ADHD among adolescents admitted for residential treatment for substance misuse. The project design was a retrospective chart review including adolescents age 11–17 residing in a residential treatment center who received the Conner's Rating Scale. The Conner's Rating Scale offers a reliable tool to aid in the diagnosis of ADHD within this fragile population and resulted in an elevation of T scores in the inattentive and defiance/aggression domains. Finally, by highlighting the relationship between ADHD and SUD, there can be an enhanced focus on the treatment of ADHD within the adolescent SUD population.

NO. 14

RELATIONSHIP OF CARIPRAZINE PLASMA CONCENTRATION TO EFFICACY AND SAFETY IN PATIENTS WITH SCHIZOPHRENIA OR BIPOLAR MANIA

Lead Author: Timothy J. Carrothers, Sc.D.

Co-Author(s): Susan Willavize, Ph.D., David Jaworowicz, Ph.D., Julie Passarell, M.A., Antonia Periclou, Ph.D., Parviz Ghahramani, Ph.D., Suresh Durgam, M.D., Willie Earley, M.D., Margit Kapás, Ph.D., Tatiana Khariton, Ph.D.

SUMMARY:

Background: Population exposure-response analysis was undertaken to describe the relationship of drug concentrations to measures of clinical efficacy and safety in patients with schizophrenia or bipolar mania. **Methods:** Data were obtained from more than 1,200 patients with bipolar mania who were randomized to cariprazine (3–12mg/d) or a placebo in two three-week double-blind, placebo-controlled Phase 3 studies and a 16-week open-label safety study. Data were obtained from more than 3,000 patients with schizophrenia who were administered cariprazine (1.5–21mg/d) or a placebo in two Phase 1b and seven Phase 2/3 studies (3–6-week double-blind, placebo-controlled studies or 48-week,open-label extension studies). Exposure metrics based on total cariprazine [nM] (defined as the molar sum of cariprazine and its two major metabolites of similar pharmacological activity: desmethyl-cariprazine and didesmethyl-cariprazine) were explored for potential relationships with efficacy and safety endpoints. Modeling was performed with NONMEM, a nonlinear mixed-effects modeling software package, utilizing standard pharmacometric techniques. **Results:** Bipolar mania: Exposure to average total cariprazine was found to relate to reductions in Young Mania Rating Scale total scores via a saturable Emax-type relationship, with 50% of overall potential reduction reached at concentrations associated with typical values achieved with steady-state 4.5mg/d dosing. Time-weighted total average concentration (C_{ave}) was found to have a statistically significant relationship with the probabilities of adverse events (akathisia, EPS without akathisia/restlessness, nausea and/or vomiting, and Parkinsonism cluster). These analyses demonstrated an increase in efficacy with increasing dose in the range of 1.5–12mg/d, with 3mg/d as the lowest efficacious dose. Dose

uptitration from 3 to 12mg/d was associated with a tradeoff between an increase in efficacy and an increase in adverse events. Schizophrenia: Exposure to average total cariprazine was found to relate to reductions in Positive and Negative Syndrome Scale total scores via a saturable Emax-type relationship, with 50% of overall potential reduction reached at concentrations associated with typical values achieved with steady-state 3mg/d dosing. Time-weighted total C_{ave} was found to have a statistically significant relationship with the probabilities of adverse events. These analyses demonstrated an increase in efficacy with increasing dose in the range of 1.5–12mg/d. Dose uptitration from 1.5 to 12mg/d was associated with a tradeoff between an increase in efficacy and an increase in adverse events. **Conclusion:** These population exposure-response analyses support the efficacy and safety of FDA-approved dose ranges of 3–6mg/d for treatment of bipolar mania and 1.5–6mg/d for treatment of schizophrenia. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 15

MEDICAL COMORBIDITY IN VASCULAR NEUROCOGNITIVE DISORDERS: A MATCHED CASE-CONTROL STUDY

Poster Presenter:Miguel Habeych, M.D., M.P.H.
Lead Author: Ruby C. Castilla-Puentes, M.D., Dr.P.H.

SUMMARY:

The objective of this study was to compare the presence of comorbid medical conditions between patients with vascular neurocognitive disorders (VNCD, also called vascular dementia) and a control group using the Integrated Health Care Information Services (IHCIS) database. Vascular neurocognitive disorders were defined by the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes 290.40, 290.4, 290.41, 290.42 and 290.43. An individual matching method was used to select the controls, which were matched to cases on a 15:1 ratio by age, gender, type of health plan and pharmacy benefits. Alzheimer's disease, any other dementia or associated cognitive deficits were considered exclusion criteria. Among the IHCIS patients 60 or older with a full year of eligibility during 2010, there were 898 VNCD patients, 63.6% of whom were women. Cerebrovascular disease, atherosclerosis, heart failure and atrial fibrillation were found at 12.6, 4.6, 2.8 and 1.7 times higher prevalence in VNCD patients, respectively. Compared to controls, VNCD patients had more septicemia, injuries, lung diseases and urinary diseases (all $p<0.0001$). This study confirms that these four medical comorbidities are frequent complications of VNCD, and physicians should be alert to their presence in patients with VNCD.

NO. 16

WITHDRAWN

NO. 17

PREVALENCE OF DISRUPTIVE MOOD DYSREGULATION DISORDER (DMDD) AND ITS COMORBIDITY WITH OTHER CLINICAL DISORDERS

Lead Author: Daria Chase, Ed.M.
Co-Author(s): David L. Pogge, Ph.D., Martin Buccolo, M.A., Steve Pappalardo, M.A., Maria Rozon, M.A., Philip D. Harvey, Ph.D.

SUMMARY:

Background: Disruptive mood dysregulation disorder (DMDD) is a newly defined disorder in the *DSM-5*. This condition includes the presence of both depression and hostility and/or explosiveness. Many children who previously received a diagnosis of bipolar disorder have been found to meet criteria for DMDD. This study examined the prevalence and comorbidities for DMDD in a consecutively discharged sample of 100 6–12-year-old children who had received inpatient treatment in a private psychiatric hospital. **Methods:** Consecutive discharges received a comprehensive chart review conducted by two independent raters. This review used all information in the chart, including structured clinical assessments performed by the primary therapists. The abstraction tool consisted of a checklist of the variables corresponding to *DSM-5* criteria for the disorders of interest (DMDD and comorbidities) and a list of all symptoms or other behaviors required to confirm these diagnoses. The focus of the investigation was on the symptoms relevant to mood and behavioral disorders, such as behavior problems (i.e., hostility and aggressive behavior, conduct problems, inattention, and impulsivity) and mood problems. Further, information was collected to determine if cases met criteria for bipolar disorder, which is an exclusionary diagnosis for DMDD. **Results:** The length of stay for the 100 cases ranged from seven to 49 days (mean=15), and 64% of the cases were male. Eighteen percent of the 100 cases sampled met criteria for DMDD; 50% of these children had no

comorbid disorders, and 50% received a comorbid diagnosis of major depressive disorder. In this subsample, 72% were male. Eighty-nine percent of this subsample received admission diagnoses of mood disorder NOS, and 11% received a diagnosis of bipolar disorder NOS upon admission. **Conclusion:** DMDD was common and was often comorbid with major depression. Not one case out of 100 consecutive discharges met criteria for bipolar disorder during their stay, despite a typical rate at this hospital of diagnosis of bipolar disorder (all subtypes) in children of about 20% or more. Cases with DMDD appear to present a diagnostic challenge to clinicians, as evidenced by the 100% rate of "NOS" diagnoses in the sample who met criteria for DMDD. DMDD appears to offer a precise diagnosis that is common in child psychiatric inpatients, which should allow for the development of targeted psychotherapeutic and pharmacological interventions.

NO. 18

EFFICACY OF HLD200 IN A PHASE III ANALOG CLASSROOM STUDY OF CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Lead Author: Ann C. Childress, M.D.
Co-Author(s): Mary Ann McDonnell, Ph.D., Sharon Wigal, Ph.D., Scott Kollins, Ph.D., Norberto J. DeSousa, Floyd R. Sallee, M.D., Ph.D.

SUMMARY:

Objective: Evaluate if evening treatment with HLD200 improved control of ADHD symptoms, compared to a placebo (PBO), throughout the day in pediatric subjects with ADHD. **Methods:** This 11-week, exploratory, analog classroom study consisted of a four-week screening period and a six-week, open-label, treatment optimization phase, followed by a one-week randomized, double-blind, placebo-controlled, parallel-group test phase. Forty-eight subjects with ADHD, age 6–12, who had current or prior response on methylphenidate (MPH) and no other major medical condition were enrolled. At the start of the six-week open-label phase (Visit 2 [V2]), 43 subjects initiated HLD200 at their previous MPH dose equivalent (or approximately. 1.4mg/kg HLD200 at investigator discretion) for one week. Five subsequent weekly dose adjustments (V3–7) were permitted to achieve an optimal daily dosage and optimal evening administration time prior to the start of the double-blind phase. At V8, subjects were randomly assigned (1:1 ratio) to double-blind HLD200 (n=22) or PBO (n=21) treatment for a period of one week. The primary efficacy endpoint utilized the Swanson, Kotkin, Alger, M-Flynn and Pelham Rating Scale combined score (SKAMP-CS), measured across six test sessions from 8 a.m. through 4 p.m. (11–19±2.0 hours after dose) at V9/Day 50. Additionally, the SKAMP-CS measured across all eight test sessions from 8 a.m. through 8 p.m. (11–23±2.0 hours after dose) at V9/Day 50 served as an exploratory endpoint. The Permanent Product Measure of Performance (PERMP) combined score, measured from 8 a.m. to 8 p.m., served as a secondary endpoint. The average treatment difference between HLD200 and PBO for all efficacy endpoints was estimated using least squares (LS) means from a mixed-effects repeated measures model (MMRM) with treatment, session and treatment-by-session interaction as fixed effects and subject as a random effect (CI=95%). **Results:** There were a total of 23 males and 20 females enrolled; mean age was 9.7 years. A statistically significant improvement in the SKAMP-CS score from 8 a.m. to 4 p.m. was achieved on V9/Day 50 (HLD200: 11.8; PBO: 18.9, p=0.0027). Additionally, a statistically significant improvement in the exploratory SKAMP-CS score during the 12-hour period from 8 a.m. to 8 p.m. was achieved on V9/Day 50 (HLD200: 11.8; PBO: 18.8, p=0.0028). PERMP combined scores demonstrated statistically significant improvements at all time points from 8 a.m.–8 p.m. (p=0.0008). There were no early terminations or reports of treatment-emergent adverse events (TEAEs) leading to early withdrawal and no serious TEAEs during the course of the study. **Conclusion:** This exploratory endpoint study showed that when taken at night before bedtime, HLD200 produced statistically significant reductions in ADHD symptoms throughout the day, as measured by SKAMP-CS and PERMP combined scores, and demonstrated a favorable tolerability and safety profile in pediatric ADHD subjects.

NO. 19

PARENTAL AGE AS A RISK FACTOR FOR OBSESSIVE-COMPULSIVE DISORDER (OCD) IN A NATIONWIDE POPULATION-BASED SAMPLE

Lead Author: Roshan Chudal, Ph.D., M.B.B.S., M.P.H.
Co-Author(s): Hanna Rintala, M.D., Susanna Leivonen, M.D., Susanna Hinkka-Yli-Salomäki, M.Sc., Sami Leppämäki, M.D., Ph.D., Andre Sourander, M.D., Ph.D.

SUMMARY:

Background: Obsessive-compulsive disorder (OCD) is a chronic psychiatric disorder characterized by the presence of recurrent obsessions and/or compulsions. Symptoms of OCD and schizophrenia coexist in patients more often than a chance occurrence, and studies suggest they may have overlapping pathophysiology as well. Advancing paternal age has been consistently shown to be associated with increased risk of schizophrenia; however, there is limited knowledge of the association between parental age, a potentially modifiable factor, and OCD. This study examined the association between parental age, both maternal and paternal, and offspring OCD. **Methods:** In this nested case-control study, we identified 2,218 individuals born in Finland during 1987–2009 and diagnosed with OCD, as identified from the Finnish Hospital Discharge Register (FHDR) by the end of 2012. Each case was matched with four controls (n= 8,794) that were without a diagnosis of OCD, any anxiety disorder, or severe or profound mental retardation. Controls were matched by sex, date of birth and being alive and living in Finland on the date of diagnosis of the matched case, identified from the Finnish Population Register. Conditional logistic regression was used to examine the association, adjusting for potential confounding due to age of the other parent, parental psychiatric history, parity, maternal marital status and socioeconomic status. **Results:** The mean maternal and paternal age among cases were 29.7 (SD=5.4, range: 16–47) and 32.1 (SD=6.2, range: 16–74), respectively. In the unadjusted analysis, both advancing maternal and paternal age were associated with an increased likelihood of OCD. In the final model, adjusting for all covariates, maternal age older than 30 was associated with an increased likelihood of OCD in offspring. Mothers older than 40 had a 46% increased likelihood of OCD (OR=1.46, 95% CI [1.07, 1.99]). **Discussion:** The finding of an increased likelihood of OCD with advancing maternal age is in line with a previous Danish study. The lack of association with advancing paternal age, unlike as seen in schizophrenia, suggests different effects of paternal age on these disorders. Findings from this study suggest special attention may be needed while dealing with children of older parents. In consideration of the increasing trend of delayed parenthood, a detailed understanding of the mechanism of action is needed before planning any preventive measures.

NO. 20

MULTIDIMENSIONAL RELATIONSHIP BETWEEN AUDITORY VERBAL HALLUCINATIONS AND PANSS FACTORS OF PSYCHOPATHOLOGY IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: In-Won Chung, M.D., Ph.D.
Co-Author(s): Sam Yi Shin, Se Hyun Kim, Nam Young Lee, Tak Youn, Yong Sik Kim

SUMMARY:

Objective: This study examined the multidimensional relationship between auditory verbal hallucinations (AVHs) and Positive and Negative Syndrome Scale (PANSS) factors of psychopathology in patients with schizophrenia. We explored the differences between assessments of hallucination by the clinicians and patients. **Methods:** Eighty-two patients with schizophrenia who were assessed by the Hamilton Program for Schizophrenia Voices Questionnaire (HPSVQ), Psychotic Symptom Rating Scale–Auditory Hallucination (PSYRATS-AHS), and the PANSS were recruited. Hwang's five-factor model of the PANSS, items and total scores of hallucination scales, and Kim's and Hoddock's factor models of hallucination were applied to examine the correlations between psychopathology and AVHs. AVH-positive patients were 50 in the PANSS-HPSVQ group and 24 in PANSS-PSYRATS-AHS. These two groups were separately analyzed. **Results:** Among the five factors of the PANSS, negative and depression/anxiety factors were correlated with the total scores of HPSVQ and PSYRATS-AHS, and positive and autistic preoccupation factors were correlated only with the total score of PSYRATS-AHS. Activation factor was correlated with none of the total scores of HPSVQ/PSYRATS-AHS. These correlation patterns of a total score of HPSVQ/PSYRATS-AHS were the same in the emotional factor of HPSVQ and the physical factor of PSYRATS-AHS, respectively. In the items that showed significant correlations, correlation coefficients of the PANSS-PSYRATS-AHS group ranged from 0.406 to 0.755, and those of PANSS-HPSVQ ranged from 0.283 to 0.420. **Conclusion:** This study suggested that the psychopathological domains of schizophrenia were differentially correlated with AVHs, and the assessment of AVHs by clinicians and patients showed substantial differences that should be integrated into the therapeutic interventions.

NO. 21

EFFECTIVENESS OF ELECTROCONVULSIVE THERAPY ON CLOZAPINE-RESISTANT SCHIZOPHRENIA

Lead Author: In-Won Chung, M.D., Ph.D.
Co-Author(s): Hye Sung Kim, Sam Yi Shin, Se Hyun Kim, Nam Young Lee, Tak Youn, Yong Sik Kim

SUMMARY:
Objective: Clozapine treatment showed inadequate response in 40 to 70% of patients with clozapine-resistant schizophrenia. Electroconvulsive therapy (ECT) might be an effective and safe option for augmenting clozapine's effects. This case series report explored ECT's effects in clozapine-resistant schizophrenia. **Methods:** Through a retrospective electronic medical record review, seven inpatients with clozapine-resistant schizophrenia who had treated with ECT in Dongguk University International Hospital were recruited. Clozapine resistance was defined as a history of persistent psychotic symptoms after a trial of clozapine for at least 12 weeks and a blood level higher than 350ng/mL. The bilateral electrode was applied with MECTA Spectrum 5000Q under general anesthesia. We explored the mean change and mean rate of change in total score and the changes of five factors in the Positive and Negative Syndrome Scale (PANSS) before and after ECT. **Results:** The mean reduction of the PANSS total score in seven patients after ECT was 17.9 (±12.8), which was significant (p=0.0384). The mean reduction rate was 25.5% (±14.3%) from baseline using a 0–6 rating system. The average number of ECT sessions was 13.4 (±4.6). The average blood clozapine level before ECT was 637.9ng/mL (±141.3), and this blood level was not significantly changed after ECT. Five (71.4%) out of seven patients were identified as clinical remission with the traditional criterion of 20% reduction used in medication-resistant schizophrenia trials. One had 19.3% reduction, and another who was negative type in the PANSS had no change at all. Among the five PANSS factors, only negative factor did not show a significant score reduction. During ECT treatment, we did not observe any remarkable treatment-related side effects and changes. **Conclusion:** This retrospective case series report study showed that ECT demonstrated additional clinical benefits in clozapine-resistant schizophrenia. Four factors of the PANSS decreased significantly except negative factor. This study supported the conclusion that ECT augmentation could be a favorable strategy in the treatment of clozapine-resistant schizophrenia. Further promising research would target a larger number of patients.

NO. 22

RISK FACTORS AND POPULATION ATTRIBUTABLE FRACTIONS OF SUICIDAL IDEATION AMONG KOREAN ELDERLY

Lead Author: Sang-Keun Chung
Co-Author(s): Jong-Il Park, M.D., Jong-Chul Yang, M.D., Ph.D., Tae Won Park, M.D., Ph.D.

SUMMARY:
Objective: Investigate the risk factors of suicidal ideation and their population attributable fraction (PAF) in a representative sample of the elderly population in Korea. **Methods:** We examined the dataset of the Survey of Living Conditions and Welfare Needs of Korean Older Persons, which was conducted by the Korea Institute for Health and Social Affairs (KIHASA) in 2011. Participants (n=10,674) were randomly selected from the elderly aged more than 65 years old. Multivariate logistic regression was used to investigate risk factor of suicidal ideation in terms of their sociodemographic- and health-related variables, and after that, the PAF was calculated with adjustment for other risk factors. **Results:** The prevalence of depression and suicidal ideation were 30.3% and 11.2%, respectively. In multivariate analysis, our results revealed that older age (OR=0.659 for 75–79 years, OR=0.524 for 80–84 years, OR=0.324 for older than 85 years), economic status (OR=0.594 for fifth quintile), poor social support (OR=1.279), current smoking (OR=1.421), sleep abnormality (OR=1.744), chronic illness (OR=1.404), poor subjective health (OR=1.559), functional impairment (OR=1.448) and depression (OR=4.364) were significant risk factors of suicidal ideation. Depression was associated with a fully adjusted PAF of 45.7%, followed by chronic illness (19.4%), poor subjective health status (18.9%), sleep abnormality (14.1%), functional impairment (4.9%), poor social support (4.2%) and current smoking (3.6%). **Conclusion:** Among various risk factors of suicidal ideation, preventive strategies focusing especially on depression might reduce the impact of suicidal ideation in the elderly population. In addition, a special mental health center will be needed to manage suicide risk in the elderly population.

NO. 23

MENTAL HEALTH STATUS AMONG USERS OF MOBILE MENTAL HEALTH APPLICATION "MINDSCAN" IN KOREA

Poster Presenter:Jong-Il Park, M.D., Ph.D.
Lead Author: Sang-Keun Chung

Co-Author(s): Jeong-Hee Woo, Sang-Jun Lee, Jeunghoon Lee, Eun-Ji Kim, Jong-Chul Yang, Tae-Won Park, Young-Chul Chung

SUMMARY:
Objective: This study investigated mental health status among the "Mindscan" (mobile application for aiding people with mental health problems) users to raise accessibility to mental health care and improve their mental health through assessable and early screening. **Methods:** We developed a mobile application with touch screen scales for stress, depression and suicidal ideation. Using the aggregated data of the "Mindscan" application, from March 2014 to August 2015, we analyzed the demographic variables and levels of stress, depression and suicidal ideation using self-rating scales such as the Perceived Stress Scale (PSS), the Center for Epidemiological Studies Depression Scale (CES-D) and the Scale for Suicidal Ideation (SSI). **Results:** A total of 18,785 respondents performed PSS, 15,539 respondents performed CES-D and 15,539 respondents performed SSI. The mean total scores of each scale were 24.33, 31.33 and 28.22, respectively. The proportions of high-risk groups were 83.15% for PSS (cutoff score over 19), 81.27% for CES-D (cutoff score over 21) and 73.70% for SSI (cutoff score over 22). The mean scores for PSS of each sex were 23.39 for men and 24.59 for women. Those for CES-D were 11.26 for men and 10.95 for women, and those for SSI were 26.98 for men and 28.64 for women. Women showed significantly higher PSS, CES-D and SSI scores when compared to men. Younger users of "Mindscan" showed significantly higher PSS and CES-D scores when compared to older users. An age group of 20–29 showed mostly higher suicidal ideation (mean SSI score 29.57) when compared to other groups. **Conclusion:** It could be assumed that groups at high risk for mental health concerns were more likely to use the "Mindscan" application. The groups of younger ages and women were more likely to have higher stress, depression and suicidal ideation. Further studies of mental health intervention might be needed to widely use this mobile application.

NO. 24

IMPACT OF DOSE ON DURATION OF ATOMOXETINE TREATMENT IN ADULTS WITH ADHD

Lead Author: David B. Clemow, Ph.D.
Co-Author(s): Rebecca L. Robinson, M.S., Allen W. Nyhuis, M.S.

SUMMARY:
Objective: Compare atomoxetine (ATX) length of therapy (LoT) among adults with ADHD who reached the recommended 80mg/day dose (≥ATX80) versus those who did not (<ATX80) in monotherapy (mono) and combination therapy (with another ADHD medication; combo) patients. **Methods:** This was a retrospective observational cohort study of the Truven Health Marketscan Commercial Claims Database from January 1, 2006–September 30, 2013, with a six-month pre-index (first ATX claim as index) naïve period and a one-year follow-up period. 36,076 mono and 1,548 combo patients were analyzed separately. LoT during follow-up was calculated using prescription claim fill dates and included all days with medication on hand regardless of treatment gaps. **Results:** For mono, ≥ATX80 patients were more likely than <ATX80 patients to be older, be male, have comorbidities and be prescribed ATX by a psychiatrist. A larger percentage of combo versus mono patients were hyperactive/combined type, were prescribed ATX by a psychiatrist, had pre-index ADHD medication use and had comorbidity. Only 45.0% of mono and 77.9% of combo patients reached an ATX dose of ≥80mg over one year. When patients filled at least one 80mg prescription, their total days of therapy over the course of a year were significantly greater than if they did not (mono: 159.3 vs. 65.6 days; combo: 237.4 vs. 172.0 days; $p<0.0001$). Across all time points examined (day 14, 30, 60, 90 and 210) for mono and combo, ≥ATX80 patients had greater mean doses than <ATX80 patients ($p<0.0001$). Combo patients had longer ATX LoT than mono patients regardless of whether they reached 80mg or not ($p<0.0001$), but mono patients' LoT was 93.7 days longer for ≥ATX80 vs. <ATX80 patients compared to 65.4 days for combo patients. Of mono patients reaching 80mg, 71.7% did so by day 30, while 20.4% did not until after 60 days. Of combo patients reaching 80mg, 62.8% did so by day 30, while 28.1% did not until after 60 days. A greater number of mono patients were treatment naïve than previously treated during the pre-index period, with the reverse observed for combo patients. For mono ≥ATX80 and <ATX80 patients, LoT was significantly ($p<0.0001$) less in previously treated patients compared to naïve patients. **Discussion:** Previously published data suggest underdosing ATX could lead to suboptimal efficacy. The current data suggest dosing <80mg/day could contribute to suboptimal treatment because it leads to significantly reduced treatment duration. This contrasts with previous

data showing no difference in persistency (days until stopping index treatment) between patients continually dosed at 80mg/day and those never reaching 80mg. Cumulative days of therapy over time, rather than consecutive days of therapy, may be more clinically relevant for ADHD patients who tend to start/stop medication. **Conclusion:** Ensuring adult ADHD patients are treated with ATX at a target dose of 80mg/day is an important clinical consideration for maximizing patient LoT.

NO. 25

PREHOSPITAL DIVERSION OF PATIENTS WITH ACUTE MENTAL HEALTH CRISES

Lead Author: Jamie O. Creed, B.S.
Co-Author(s): Julianne M. Cyr, M.P.H., Hillary Owino, M.P.H., Shannen Box, B.S., Brian Sheitman, M.D., Beat Steiner, M.D., Michael W. Bachman, M.H.S., Jefferson G. Williams, M.D., M.P.H., J. Brent Myers, M.D., M.P.H., Seth W. Glickman, M.D., M.B.A.

SUMMARY:

Background: Emergency departments (EDs) are overburdened with patients with acute mental health crises. Emergency medical services (EMS) are a promising mechanism to reduce unnecessary ED use and improve patient care by rapidly and safely diverting appropriate patients in crisis to alternative treatment settings. **Objective:** Describe characteristics and outcomes of patients treated in a pilot intervention to divert 911 patients experiencing a mental health crisis. Eligible patients were evaluated by advanced practice paramedics (APPs) and diverted to a dedicated crisis and assessment services unit located within a nearby community mental health center, WakeBrook (WB), instead of the ED. **Methods:** We performed a retrospective cohort study of patients screened by APPs from August 2013 through July 2014. APPs followed specialized protocols to confirm a mental health crisis and exclude an acute medical condition. We linked EMS data to destination record (WB or ED) data using direct identifiers. Descriptive statistics were used for patient demographics, disposition and length of stay (LOS). Mann-Whitney U tests were used to assess differences in LOS. **Results:** EMS screened 1,557 patients; 937 (60%) did not meet diversion criteria and were transported to the ED, and 223 (14%) were diverted to WB. The remaining 397 (25%) refused transport to WB or were transported to another destination (e.g., detox facility). We linked a high proportion of both ED (n=623, 66%) and WB (n=220, 99%) records. Overall patient characteristics at WB were similar to the ED (male 55% vs. 46%; white 58% vs. 66%; uninsured 38% vs. 36%; median age 38 vs. 37 years, respectively). In the ED, 267 (43%) patients were admitted to the hospital, 135 (22%) were transferred to a psychiatric facility, 205 (33%) were discharged and 16 (3%) left against medical advice. Notably, among the 267 patients admitted to the hospital, 128 (48%) were admitted to board pending psychiatric transfer. At WB, 23 (10%) were admitted, 37 (17%) were accepted for residential treatment, 89 (40%) were transferred to a psychiatric facility, 40 (18%) were discharged, 11 (5%) refused services and 10 (5%) were transferred to an ED within four hours of arrival. For those patients admitted for psychiatric reasons, median LOS prior to disposition was significantly longer in the ED (41.1 hours, interquartile range (IQR): 17.8–63.1) compared to acute crisis services at WB (21.4 hours, IQR: 8.7–46.4), p=0.03. **Conclusion:** A mobile integrated health program allowed a significant number of patients to be treated at a dedicated community mental health center, where treatment LOS times were significantly shorter compared to a large, regional ED. Additional work is needed to characterize subsequent outcomes. Successful broader implementation could improve care quality and significantly and safely reduce the volume of patients seen in the ED with acute mental health crises.

NO. 26

WITHDRAWN

NO. 27

TREATMENT OF UNIPOLAR, NONPSYCHOTIC MAJOR DEPRESSIVE DISORDER WITH TRANSCRANIAL MAGNETIC STIMULATION: EXAMINING LONG-TERM EFFICACY OF TMS

Lead Author: Kim K. Cress, M.D.
Co-Author(s): Kerstin Brown, Beth Landry, Roxane Zotyka

SUMMARY:

Background: Major depressive disorder (MDD) affects approximately 16 million lives in the U.S. (6.7% of adults) with about 50% seeking help and only 20% receiving adequate treatment. Transcranial magnetic stimulation (TMS) is noninvasive, non-systemic therapy that uses pulsed magnetic fields to induce localized neuronal depolarization and beneficial effects on the symptoms of MDD. The purpose of this review is to evaluate standardized

symptom score outcomes in routine clinical practice and establish the long-term efficacy of TMS. **Methods:** 120 patients with a primary diagnosis of unipolar MDD who had not received benefit from antidepressant treatment (average of 3.7 in current MDD episode) received TMS treatment. Each patient was assessed using the Beck Depression Inventory (BDI) scale. Scores were taken prior to and at the end of the acute treatment phase. Long-term results were reported on those patients who returned for assessment. **Results:** The study population included an average age of 48.4 years with 69.2% female. The mean TMS sessions were 41.1 with a range of 1,600 to 4,600 pulses. Ninety-four patients (78.3%) demonstrated a minimum 50% improvement in the BDI-II symptom score, while 84 patients (70.0%) achieved remission with reported symptom scores of <13. Long-term data were collected on patients who achieved remission in the acute phase of treatment and who were available for follow-up. Data were collected at five time points: 6–12 months, 12–24 months, 24–36 months, 36–48 months and 48 months or greater. 71.9% (23/32) of patients maintained remission over an average of 14.3 months following the acute treatment phase, with a 28.1% relapse rate. At 41.1 months, 90.0% (9/10) of patients who were available for follow-up maintained remission. Three patients were available for follow-up data at more than five years, with 66.7% (2/3) of patients maintaining remission at an average of 60.3 months. TMS was well-tolerated, and there no patients discontinued treatment due to adverse events. **Conclusion:** In routine clinical practice, TMS shows significant improvements for treatment of major depression in a treatment-resistant population utilizing the Beck Depression Scale. In addition, long-term data further demonstrates the efficacy of TMS as a durable treatment option in a population that has failed multiple medication trials.

NO. 28

A RETROSPECTIVE ANALYSIS OF TRANSCRANIAL MAGNETIC STIMULATION RIGHT DORSOLATERAL PREFRONTAL CORTEX TREATMENTS FOR GENERALIZED ANXIETY DISORDER

Lead Author: Kim K. Cress, M.D.
Co-Author(s): Kerstin Brown, Beth Landry, Roxane Zotyka

SUMMARY:

Background: TMS Therapy is FDA-approved for treatment of unipolar, nonpsychotic major depressive disorder, but shows great promise for the treatment of generalized anxiety disorder (GAD). Our experience in treating patients with GAD with low-frequency, right dorsolateral prefronal cortex (RDLPFC) transcranial magnetic stimulation (TMS) therapy has shown significant improvement of anxiety symptoms. **Methods:** Seventeen patients with a diagnosis of GAD were treated with low-frequency, right-sided TMS therapy between 2011 and 2015. Patient diagnoses of GAD were based on *DSM-IV* and *DSM-5* criteria. Patients were treated only on the RDLPFC with a 1Hz per second protocol for either 1,600 or 2,400 pulses. Patients were assessed using the Beck Anxiety Inventory Scale (BAI). Scores were performed prior to and at the end of the acute treatment phase. Long-term results were reported on those patients who returned for assessment. **Results:** The study population included an average age of 38.7, with 64.7% female. The mean number of TMS sessions was 34.2, with a range of 1,600 to 2,400 pulses. Ten patients (58.8%) achieved remission. 64.7% of patients showed a response to TMS therapy based on BAI response criteria of 50% improvement of symptoms. Long-term data were collected on patients who achieved remission in the acute phase of treatment and who were available for follow-up. Data were collected 6–12 months following acute treatment on 14 patients who were available for follow-up assessment. 57.1% (8/14) of patients maintained remission with an average of 11.9 months following the acute treatment phase, with a 42.9% relapse rate. TMS therapy was well tolerated, and there were no patients who discontinued treatment due to adverse effects. **Conclusion:** In routine clinical practice, TMS shows significant promise for treatment of GAD using low-frequency, right-sided TMS therapy utilizing the BAI. Data on low-frequency RDLPFC TMS therapy are limited, but support RDLPFC treatment for those who suffer from GAD. Thus, further studies should be considered.

NO. 29

WITHDRAWN

NO. 30

WITHDRAWN

NO. 31

GENERAL AND MENTAL HEALTH OUTCOMES IN OUTDOOR BEHAVIORAL HEALTH CARE: AN INTEGRATED CARE APPROACH

Lead Author: Steven M. DeMille, Ph.D.

Co-Author(s): Anita Tucker, Ph.D., Christine Norton, Ph.D.

SUMMARY:
Background: Research on outdoor behavioral health care (OBH) continues to support its effectiveness at decreasing clinical dysfunction in youth participants; however, limited research has looked at its impact on physical wellness. While researchers recently found OBH to positively impact the BMI levels of its youth participants, to date no research has specifically looked at both the impact on the psychological and physical health of OBH participants. This study aimed to fill this gap in the research. **Methods:** This study collected data from 395 participants who attended an OBH program between 2011 and 2013. Most of the participants were male (70.1%) and Caucasian (76.1%), with 8.5% Hispanic, 3.2% Native American and the rest Mixed Race. Most participants were adolescents, with 76.8% of youth between the ages of 15 and 18 who spent on average 80 days (SD=26.2) in the program. To measure psychological outcomes, the Youth Outcomes Questionnaire–2 (YOQ) was completed by youth at both intake and discharge. In addition, weight, height and body fat measurements were collected by the program nurse to monitor physical health. BMI scores, body fat percentages, lean mass and fat mass were calculated at both intake and discharge. **Results:** At discharge, all YOQ scores, including its six subscales, were below the clinical cutoff scores, with paired sample t-tests showing statistically significant decreases ($p<0.001$). In terms of physical health, participants were grouped according to their intake BMI categories (underweight, normal, overweight and obese), with underweight participants gaining an average of 6.5 pounds (SD=6.8), overweight participants losing a mean of 11.5 pounds (SD=11.5) and obese individuals losing an average of 35.5 pounds (SD=22.2), all statistically significant improvements ($p<0.001$). Normal weight participants had no significant changes in weight. To explore how intake BMI related to YOQ improvements, a two-way ANOVA of gender (male, female) and BMI at intake found no main effects for gender and no interaction effects, but main effects for BMI. Post hoc analyses showed that underweight individuals had significantly smaller improvements than youth who started the program as normal, overweight or obese. In addition, youth who started the program obese had significantly larger YOQ improvements than overweight or normal weight participants. **Discussion:** This study supports OBH as a way to improve both the general and mental health of youth, suggesting it can be seen as an effective wellness approach for youth. This was especially evident by the significant psychological improvements that were associated with significant weight loss for obese youth. As they became more physically fit, they became more emotionally fit. It is unclear why this was not the case for underweight youth, and this study did not look at presenting diagnosis to see if the youth had a history of anorexia.

NO. 32

PREDICTIVE VALIDITY OF THE MODULAR ASSESSMENT OF RISK FOR IMMINENT SUICIDE (MARIS) SCALE: A NOVEL APPROACH TO SUICIDE RISK ASSESSMENT

Lead Author: Nicole E. Derish, M.D.
Co-Author(s): Zimri S. Yaseen, M.D., Jessica Briggs, Molly Duffy, Anna Frechette, Igor Galynker, M.D., Ph.D.

SUMMARY:
Background: Most suicide victims saw a health professional within six months prior to their suicide, yet currently, no valid tool predicts imminent suicide. To have a wide-reaching impact on clinical work, such an instrument must be accurate, brief and simple, so it can be used without special training or equipment. To this end, we have developed and obtained preliminary data on the innovative, multi-informant (patient and clinician), Modular Assessment of Risk for Imminent Suicide (MARIS). **Methods:** Patients psychiatrically hospitalized for suicide risk were assessed with the MARIS prior to discharge and followed up for assessment of suicidal behavior after discharge at one to two months. A battery of self-report questionnaires assessing mood and other symptoms, including the Beck Depression Inventory, was administered within 48 hours of admission. The MARIS was administered to patients and their treating clinicians within 24 hours before hospital discharge. Recent, lifetime and postdischarge suicidal behavior and ideation were assessed with the Columbia Suicide Severity Rating Scale, administered at admission and follow-up respectively. **Results:** We analyzed preliminary data from 59 patients who completed all assessment modules in addition to one- to two-month follow-up. Subjects lost to follow-up after discharge did not differ significantly from those with a follow-up assessment on any clinical or demographic variable.

We performed logistic regression in four steps, with suicidal behavior after discharge as the primary outcome. Step 1 included sex and age. Step 2 included lifetime number of suicide attempts, severity of suicidal ideation and level of depression at admission. Step 3 included the patient self-report modules of the MARIS and significantly improved prediction (ç‡^{2}=10.04, change in Nagelkerke R^2=0.25, p=0.007). Step 4 added the clinician assessment and self-report modules of the MARIS and significantly improved prediction (ç‡^{2}=14.46, change in Nagelkerke R^2=0.25, p=0.001), with a resultant 100% correct classification rate. **Conclusion:** Findings indicate that by combining traditional methods of suicide risk assessment, such as self-report questionnaires, with alternative lines of inquiry, such as clinician-based data, prediction of future suicidal behavior in the near term could be improved. MARIS is a promising potential clinical assessment tool for short-term suicide risk.

NO. 33

WHEN CLOZAPINE FAILS: ACUTE ADMISSIONS OF PATIENTS WITH TREATMENT-RESISTANT SCHIZOPHRENIA WHO RELAPSED FOLLOWING CLOZAPINE THERAPY: PRELIMINARY DATA

Lead Author: Luiz Dratcu, M.D., Ph.D.
Co-Author(s): Emma McLachlan, M.D., Christos Vatalis, M.D., Omar Bhakhsh, M.D.

SUMMARY:

Background: More than one-third of patients with schizophrenia fail to respond to antipsychotics. Of these, more than one-third also fail to respond to clozapine. As clozapine is the drug of choice for those who fail to respond to other agents, the options available to treat patients who also fail to respond to clozapine are few, and their prospect of remaining untreated is real. Patients who relapse after being maintained on clozapine can pose major clinical challenges. We assessed patients with treatment-resistant schizophrenia who relapsed and required hospital care after responding to clozapine. **Methods:** We reviewed patients with a psychotic illness admitted during the previous year to our all-male acute inpatient unit and identified those who had relapsed after receiving clozapine treatment in the community. We collected data on demographics, comorbidities, illness duration, time on clozapine therapy, previous antipsychotics, number of previous hospitalizations and likeliest reason for relapse. We present data of our 100 most recent admissions. **Results:** Twelve patients aged 42±12.6 (range 27–64) had been on clozapine prior to admission. No (n=7) or partial (n=5) adherence was the likeliest cause of relapse, yet reason for poor compliance was documented in only four (33%) cases. They had a documented illness spanning 17.7±9.5 years (5–36) and had been on clozapine for 6.9±5.2 years (1–15). Most (n=10, 83%) lived in supported accommodation, had medical (n=8) or psychiatric (n=5) comorbidity, and had a history of multiple hospitalizations before and after clozapine initiation (9.2±4.0 [4–17] and 4.7±3.9 [1–11], respectively, p<0.05) and of receiving other antipsychotics (3.5±1.2 [2–6] and 1.9±1.8 [0–5], p<0.05). Clozapine was retitrated in eight patients (66%), all of whom were successfully discharged. Duration of admission was 4.5±4.2 months (1–11). **Discussion:** One in every eight admissions involved a psychotic patient known to mental health services who relapsed following clozapine treatment in the community. They were an aging group with a long history of psychosis, most living in supported accommodation, who had commenced on clozapine long after the onset of their symptoms but who seemed to have responded to it. Clozapine initiation was followed by fewer hospitalizations and reduced use of other antipsychotics. Poor adherence to treatment was the major factor for their relapse and readmission, but reasons for it were mostly unexplored. Most responded to clozapine retitration, but all required prolonged hospitalizations and enhanced service provision before they could be safely discharged. Despite advances in mental health care, poor adherence to treatment remains by far the main reason for relapse and decline in patients with schizophrenia. Worryingly, given the needs of this patient group and costs of services, this also seems the case with patients with treatment-resistant schizophrenia who have responded favorably to clozapine.

NO. 34

THYROID AXIS ACTIVITY AND DOPAMINE FUNCTION IN MAJOR DEPRESSION

Poster Presenter:Marie-Claude Mokrani, Ph.D.
Lead Author: Fabrice Duval, M.D.
Co-Author(s): Marie-Claude Mokrani, Alexis Erb, Felix Gonzalez Lopera, Xenia Proudnikova, Veronique Paris

SUMMARY:

Background: Several lines of evidence suggest alterations in both hypothalamic-pituitary-thyroid (HPT) axis and dopamine (DA) function in depressed patients. However, the functional relationships

between HPT and DA systems have not been well-defined. **Methods:** Thyrotropin (TSH) response to 8AM and 11PM Protirelin (TRH) challenges and adrenocorticotropic hormone (ACTH), cortisol and growth hormone (GH) responses to apomorphine (APO, a dopamine receptor agonist) were examined in 58 drug-free *DSM-IV* major depressed inpatients and 22 healthy hospitalized controls. **Results:** Compared with controls, patients showed lower 1) Basal serum 11PM-TSH ($p<0.03$), 11PM-ΔTSH ($p<0.005$) and ΔΔTSH (difference between 11PM- and 8AM-ΔTSH; $p<0.00001$) levels and 2) Cortisol response to APO (ΔCOR; $p<0.05$). A negative relationship between ΔΔTSH values and hormonal responses to APO was observed in the depressed group (ΔACTH: $r=-0.33$, $p=0.01$; ΔCOR $r=-0.26$, $p<0.05$; ΔGH $r=-0.43$, $p=0.001$). These correlations were not found in the control group. When patients were classified on the basis of their ΔΔTSH status, patients with reduced ΔΔTSH values (<2.5mU/L) had hormonal APO responses comparable to those of controls. Patients with normal ΔΔTSH values showed lower ΔACTH, ΔCOR and ΔGH than patients with abnormal ΔΔTSH values and controls. **Conclusion:** These results suggest that hypothalamic DA function is normal in depressed patients with HPT dysregulation (i.e., hypothalamic TRH overstimulation leading to altered TRH receptor chronesthesy on pituitary thyrotrophs). Conversely, patients without HPT axis alteration show DA dysfunction (i.e., decreased D2-receptor-like function at the hypothalamic level). Taken together, these findings are consistent with the role of TRH as a homeostatic neuromodulator in depression.

NO. 35

EARLY CHANGES IN PROLACTIN SECRETION DURING ANTIDEPRESSANT TREATMENT

Poster Presenter:Alexis Erb, M.D.
Lead Author: Fabrice Duval, M.D.
Co-Author(s): Alexis Erb, Felix Gonzalez Lopera, Xenia Proudnikova, Veronique Paris

SUMMARY:

Background: The effects of antidepressant treatment (ADT) on prolactin (PRL) secretion, either basal of after thyrotropin-releasing hormone (TRH) stimulation, have yielded contradictory results. **Methods:** We evaluated the serum levels of PRL before and after 8AM and 11PM TRH challenges, on the same day, in 50 drug-free *DSM-IV* euthyroid, major depressed inpatients (MDDs, 33 women and 17 men) and 50 hospitalized controls (HCs, 30 women and 20 men). After two weeks of ADT (venlafaxine, n=24; tianeptine, n=15; escitalopram, n=5; agomelatine, n=6), the TRH-PRL tests were repeated for all inpatients. **Results:** Both in HCs and in MDDs, 8AM and 11PM basal PRL (BL PRL) and TRH-PRL responses (i.e., ΔPRL) were higher in women than in men (all $p<0.05$). 11PM-ΔPRL and ΔΔPRL (difference between 11PM- and 8AM-ΔPRL) were lower in drug-free female MDDs compared to female HCs (all $p<0.02$). In women only, 11PM-BL PRL and ΔPRL (at 8AM and 11PM) levels were higher after two weeks of ADT than at baseline (all $p<0.005$). These changes did not differ across the antidepressant drugs and were not associated with clinical response. **Conclusion:** Our results confirm marked sex difference in PRL secretion among controls and patients. Blunted 11PM-ΔPRL and ΔΔPRL values at baseline support an alteration of TRH receptor circadian chronesthesy in depressed women. After two weeks of ADT, changes in PRL levels in women suggest that different types of ADT could enhance TRH—and/or serotonin—transmission regardless of clinical outcome.

NO. 36

AN INTERESTING RELATIONSHIP IN A PSYCHODERMATOLOGY CLINIC: A RETROSPECTIVE STUDY ON THE CORRELATION OF DELUSIONS OF INFESTATION AND NARCOTIC USE.

Lead Author: Kristin V. Escamilla, M.D.
Co-Author(s): Isela Werchan, M.D., Jason Reichenberg, M.D., Katherine Sebastian, M.P.H., R.N.

SUMMARY:

Background: Delusional infestation (DOI) is characterized by a patient's fixed belief that their body is infested by various pathogens (e.g., fibers, parasites) despite lack of medical evidence proving this. Patients such as these rarely come in contact with psychiatric providers and frequently present to dermatologists and primary care providers. Upon evaluation of patients diagnosed with delusions of infestation in a specialized psychodermatology clinic, it appeared as if the incidence of narcotic use was higher among these patients versus the general clinic dermatologic population. Research into delusions of infestation is scarce, making this diagnosis one that is difficult to understand and treat. Therefore, we conducted a retrospective study examining the correlation between patients with delusions of infestation and narcotic use. **Methods:** We conducted a retrospective chart review examining the use of narcotic medications among

patients enrolled in our university psychodermatology clinic. Sixty-four patients with the diagnosis of delusional infestation served as the study population, and the comparison group (n=354) included a subset of dermatology patients seen in an outpatient clinic by the same dermatologist that treated patients in the DOI group. Patients in the study group were adults seen between February 2011 and January 2015. The comparison group consisted of adults seen between January 2014 and August 2015 for chronic pruritic conditions including eczema, dermatitis, psoriasis, seborrheic dermatitis and contact dermatitis. Members of the research team then manually reviewed each patient's chart for the use of narcotic medications. **Results:** A chi-square test of independence evaluated the relationship between dermatologic diagnosis (DOI, other non-DOI chronic skin condition) and narcotic use (yes, no). The results show that the relationship between the variables was significant(X2 [1, n=418]=6.9, p<0.01) and that patients with delusions of infestation (25%, n=16) were more likely to use narcotics than other dermatologic patients with chronic pruritic skin conditions (12.4%, n=44). **Conclusion:** Much is unknown in the etiology and management of delusions of infestation, and more research is greatly needed. The findings from this study indicate that there is a correlation between the diagnosis of DOI and narcotic use. It is possible that this information can be used in the future to assist with diagnosis, identify risk factors for developing DOI, help target treatment of this illness and allow new avenues of research regarding delusions of infestation.

NO. 37

SEVERITY OF PTSD SYMPTOMS AND ITS RELATIONSHIP WITH SEVERITY OF ALCOHOL-RELATED PROBLEMS IN A SAMPLE OF INPATIENTS WITH ALCOHOL USE DISORDER

Lead Author: Cuneyt Evren, M.D.
Co-Author(s): Gokhan Umut, Muge Bozkurt, Bilge Evren

SUMMARY:

Objective: The aim of this study was to evaluate the effect of severity of PTSD symptoms measured with the PTSD Checklist–Civilian version (PCL-C) on severity of alcohol-related problems, while controlling the effects of state anxiety and depression in a sample of inpatients with alcohol use disorder. **Methods:** Participants (n=190) were evaluated with the Beck Depression Inventory (BDI), the State-Trait Anxiety Inventory State subscale (STAI-S), the PCL-C and the Michigan Alcohol Screening Test (MAST). **Results:** Although severity of state anxiety predicted the severity of alcohol-related problems in the first step of a linear regression model and depression predicted severity in the second, when severity of PTSD symptoms was included in the analysis, it was the only predictor for the severity of alcohol-related problems, while state anxiety and depression were no longer predictors. **Conclusion:** These findings suggest that symptoms of PTSD are related to severity of alcohol-related problems independent from severity of state anxiety and depression among inpatients with alcohol use disorder.

NO. 38

SEVERITY OF CRAVING RELATED TO SEVERITY OF ADULT ADHD SYMPTOMS AMONG INPATIENTS WITH ALCOHOL USE DISORDER

Lead Author: Cuneyt Evren, M.D.
Co-Author(s): Gokhan Umut, Muge Bozkurt, Bilge Evren

SUMMARY:

Objective: This study evaluated the relationship between craving severity and severity of adult ADHD symptoms in a sample of inpatients with alcohol use disorder, while controlling the effects of anxiety and depressive symptoms. **Methods:** Participants included 78 inpatients with alcohol use disorder. Participants were evaluated with the Obsessive-Compulsive Drinking Scale (OCDS), the Adult ADHD Self-Report Scale (ASRS), the State-Trait Anxiety Inventory (STAI) and the Beck Depression Inventory (BDI). **Results:** Although trait anxiety predicted OCDS score, trait anxiety was no longer a predictor after entering the ASRS-18 score, and the ASRS-18 score was the only predictor for severity of craving in linear regression analyses. The same result was found for ASRS-6. Among subscales of ASRS-18, inattentive score predicted OCDS score. When obsessive and compulsive dimensions of craving were taken as dependent variables, ASRS-18/ASRS-6 predicted obsessive craving score together with trait anxiety, whereas ASRS-18/ASRS-6 predicted compulsive craving alone. **Conclusion:** These findings suggest that severity of ADHD symptoms (particularly inattentive symptoms) is related to severity of the craving. Although ADHD symptoms predicted compulsive craving alone, they predicted obsessive craving together with trait anxiety. Also, ASRS-18 and ASRS-6 showed similar results,

suggesting that ASRS-6, with many less items, can be used among this population.

NO. 39

RELATIONSHIP BETWEEN SELF-MUTILATIVE BEHAVIOR AND IMPULSIVITY, SUICIDE ATTEMPT AND EARLY ONSET ALCOHOLISM AMONG INPATIENTS WITH ALCOHOL USE DISORDER

Lead Author: Cuneyt Evren, M.D.
Co-Author(s): Gokhan Umut, Muge Bozkurt, Bilge Evren

SUMMARY:

Objective: This study evaluated the relationship between self-mutilative behavior (SMB) and impulsivity, history of suicide attempt (HSA) and early onset alcoholism (EOA) in a sample of inpatients with alcohol use disorder. **Methods:** Participants included 190 inpatients with alcohol use disorder. Participants were evaluated with the Short Form Barratt Impulsiveness Scale (BIS-11-SF). **Results:** Age was lower among the group with SMB, and they were less employed, whereas duration of education and marital status did not differ between the group with SMB and the group without SMB. Rates of EOA and HSA were four times higher among those with SMB. Also, impulsivity scores were higher in the group with SMB. Together with EOA and HSA, severity of impulsivity (particularly motor impulsivity) predicted SMB in a logistic regression model. **Conclusion:** These findings suggest that motor impulsivity may be related to SMB even after controlling for EOA and HSA among inpatients with alcohol use disorder.

NO. 40

RELATIONSHIP BETWEEN ADHD AND DISSOCIATIVE EXPERIENCES AND PTSD IN A SAMPLE OF INPATIENTS WITH ALCOHOL USE DISORDER

Lead Author: Cuneyt Evren, M.D.
Co-Author(s): Gokhan Umut, Muge Bozkurt, Bilge Evren, Ruken Agachanli, Gulsen Teksin Unal

SUMMARY:

Objective: This study evaluated the relationship between ADHD and dissociative experiences and PTSD in a sample of inpatients with alcohol use disorder. **Methods:** Participants included 190 inpatients with alcohol use disorder. Participants were evaluated with the Adult ADD/ADHD *DSM-IV*-Based Diagnostic Screening and Rating Scale, Dissociative Experiences Scale (DES) and PTSD Checklist–Civilian version (PCL-C). **Results:** Age, duration of education, and marital and employment status did not differ between the group with ADHD and the group without ADHD. Rate of ADHD was higher among those with a DES score of 30 and higher than among those with a score of less than 10. Scores of PCL-C total and subclusters of PCL-C were higher in the group with ADHD. Rate of PTSD diagnosis, according to PCL-C cut-off score, was 8.2 times higher among the group with ADHD than the group without ADHD. ADHD score was moderately correlated with DES and PCL-C. DES and the presence of PTSD, particularly D cluster of PTSD, predicted ADHD in a logistic regression model. **Conclusion:** These findings suggest that ADHD may be related to PTSD, particularly D cluster, through dissociation among inpatients with alcohol use disorder.

NO. 41

A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED, MULTICENTER STUDY MEASURING THE EFFICACY AND SAFETY OF MLR METHYLPHENIDATE IN ADULTS WITH ADHD

Lead Author: Angelo Fallu, M.D.
Co-Author(s): Ann Childress, M.D., Linda Harper, M.D., Sohail Khattak, M.D., Andrew Cutler, M.D., Graeme Donnelly, M.Sc., Joseph Reiz, B.Sc.

SUMMARY:

This study was a randomized, double-blind, forced dose titration, parallel comparison of multilayer-release methylphenidate (MLR) and placebo that evaluated the clinical efficacy and safety of MLR in adults with ADHD. Of the 375 adults aged 18 years or older with a *DSM-5* diagnosis of ADHD who were invited to participate in the study, 333 completed the study. Following a one-week washout baseline period, subjects were equally and randomly assigned in a blinded fashion to either MLR 25, 45, 70 or 100mg or placebo administered once daily. Subjects underwent blinded forced titration over a two-week period, followed by an additional two weeks at their final assigned dose of active medication or placebo. The primary endpoint was the mean improvement in ADHD behavior across all doses compared to placebo, as measured by the clinician-completed ADHD-5-Rating Scale at the final visit. Other endpoints included the Clinical Global Impressions Scale (CGI), Patient Satisfaction Survey (PSS), Weiss Functional Impairment Rating Scale (WFIRS), Behavior Rating Inventory of Executive Function (BRIEF-A), Adult ADHD Quality of Life (AAQoL), Pittsburg Sleep Quality Inventory (PSQI) and the

Columbia Suicide Severity Rating Scale (CSSRS). At the end of the four weeks of double-blind treatment, there was significant improvement in ADHD symptoms in subjects who received MLR across all doses compared to subjects who received placebo as measured by a reduction in ADHD-5-RS scores (MLR: 14.49; placebo: 9.82; p=0.0026). Significant improvements in executive functioning compared to placebo were also observed (BRIEF-A Global Executive Composite: 8.0 T score units, p=0.0173), as were significant improvements in functional outcome (WFIRS-S total score, p=0.0280) and quality of life (AAQoL total score, p=0.0070). Subjects who received MLR had greater satisfaction with the onset of action (p=0.0213), duration of action (p=0.0037), level of awareness (p=0.0086) and overall efficacy (p=0.0019) compared to those who received placebo. Three treatment-emergent adverse events occurred in 10% or more in subjects who received MLR: headache (17.5%), insomnia (15.8%) and decreased appetite (11.1%). There was one serious adverse event of uterine cancer with an investigator-assessed causality of "no reasonable possibility" of relatedness to study medication. Sleep quality was not affected by MLR treatment, as measured by the PSQI (p=0.1234). Subjects who received MLR or placebo had no observed suicidal behaviors over the course of the study, as measured by the CSSRS. No clinically significant laboratory, vital signs, or ECG findings or changes were reported. **Conclusion:** MLR was safe and effective in the treatment of ADHD in adults and demonstrated superior ADHD symptom improvement compared to placebo. Significant improvements in functional outcome, executive function, quality of life and patient satisfaction were also observed with no negative impact on sleep quality.

NO. 42

ABNORMAL RESTING STATE FUNCTIONAL CONNECTIVITY IN THE ANTERIOR CINGULATE CORTEX IN OBSESSIVE-COMPULSIVE DISORDER PATIENTS

Lead Author: Qing Fan, M.D., Ph.D.

SUMMARY:

Background: Obsessive-compulsive disorder (OCD) is a chronic and refractory disease with a lifetime prevalence of two to three percent. Numerous neuroimaging studies have indicated the structural and functional dysfunctions in the anterior cingulate cortex of patients with OCD. **Methods:** We conducted resting-state functional magnetic resonance imaging (rs-fMRI) to investigate the functional activities of 23 unmediated adult OCD patients and 23 well-matched healthy controls (HCs). We selected the anterior cingulate cortex (ACC) as the seed region to compare the functional connectivity of other brain regions with ACC in patients with obsessive-compulsive disorder and healthy controls. We also analyzed the correlation between the functional connectivity of abnormal regions and OCD's clinical symptom severity without any mixed factors. **Results:** In Brodmann area 24, the patients with OCD had increased functional connectivity in the left associative visual cortex compared to HCs, but decreased functional connectivity in the left dorsolateral prefrontal cortex. In Brodmann area 32, the patients with OCD had increased functional connectivity in the left middle temporal gyrus and the left auditory cortex and right caudate nucleus than HCs, but decreased functional connectivity in the right premotor cortex and the supplementary motor cortex. Significantly positive correlation between total Yale-Brown Obsessive Compulsive Scale and compulsion scores and functional connectivity of dorsal ACC and caudate were observed. **Conclusion:** Using rs-fMRI technology, we found abnormal functional connectivity in OCD, mainly in the cortico-striatal-thalamo-cortical circuit. The study also found positive correlation between the altered region and clinical symptom severity. Results provide evidence for OCD's pathophysiology and may influence OCD therapy.

NO. 43

HOME TREATMENT IN GERMANY: CURRENT IMPLEMENTATION STATUS

Lead Author: Karel J. Frasch, M.D.
Co-Author(s): Thomas Becker, Reinhold Kilian, Franziska Widmann

SUMMARY:

Background: Home treatment (HT) for acute mental illness has been proven to be a cost-effective alternative to psychiatric hospitalization. HT has been thoroughly implemented in many Western countries such as the United States, England, the Netherlands and Scandinavia. In contrast, HT implementation in Germany is still in its infancy: only six locations were detected in 2011. This poster outlines the current implementation status of HT in Germany. **Methods:** A systematic literature and Internet search was conducted to identify German psychiatric services meeting HT criteria such as

psychiatrist-conducted multiprofessionality, 24/7 availability, limited duration and hospital bed access. In the poster, the respective services will be described in detail. **Results:** Twenty local HT services supplied by 18 providers were identified (one provider rules services in four larger Bavarian cities; in Berlin, two different companies are present): four in Nordrhein-Westfalen (the westernmost federal state with the largest population), two in Hessen (central Germany), two in the northwestern part (Niedersachsen and Schleswig-Holstein), two in Berlin, two in the former German Democratic Republic (Stralsund, Nauen) and eight in southern Germany (Bavaria and Baden-Württemberg, the economically most powerful states). There is a growing number of HT services within the legal framework of "integrated care" projects (extrabudgetarily funded) or so called regional budgets. Fifty percent of the identified providers run comprehensive mental health care centers and therefore offer HT as one of their various treatment options. Among the latter are the two most longstanding services of this kind in Germany (Frankfurt am Main, Hessen, and Krefeld, Nordrhein-Westfalen). **Discussion:** Compared to a systematic review published five years ago dealing with the same topic, HT is still underrepresented in Germany but in the process of growing.This is possibly due to 1) An increase in awareness of the importance of HT in order to deliver up-to-date mental health care and 2) The increase in potential funding sources for innovative treatments in the German Social Security Code. The inclusion of HT as an additional treatment option within the context of mental health care centers that we found in every second facility makes sense with regard to the gate keeping role that is mandatory for multiprofessional crisis resolution teams to meet HT criteria. One major limitation of this study is that our coverage of the topic may be incomplete since it must be assumed that not all existing HT services in Germany are visibly published.

NO. 44

ATOMOXETINE FOR HOARDING DISORDER: A PRECLINICAL AND CLINICAL INVESTIGATION

Lead Author: Giacomo Grassi, M.D.
Co-Author(s): Laura Micheli, Ph.D., Lorenzo Di Cesare Mannelli, Ph.D., Elisa Compagno, M.D., Carla Ghelardini, Ph.D., Stefano Pallanti, M.D., Ph.D.

SUMMARY:

Background: Hoarding disorder (HD) is a mental disorder that has been newly included in the *DSM-5*, in the obsessive-compulsive and related disorders chapter. To date, only two open studies have investigated the pharmacological management of HD, and its management remains controversial. Despite some studies suggesting that childhood attention-deficit/hyperactivity disorder (ADHD) and inattention symptoms may be related to hoarding, only a small case series study investigated the effectiveness of ADHD medications (methylphenidate) in hoarding disorder. This study evaluated the preclinical and clinical effectiveness of atomoxetine, a noradrenaline reuptake inhibitor approved for childhood and adulthood ADHD, in an animal model of compulsive-like behaviors (marble burying test) and in patients with a primary diagnosis of hoarding disorder. **Methods:** we performed a preclinical investigation assessing the effects of atomoxetine on the marble burying behavior test in mice. The number of marbles buried (to at least 60% of the depth of the sawdust) within 30 minutes in vehicle and atomoxetine-treated groups was measured. Atomoxetine (10, 30 and 60mg/kg) was administered per os 30 minutes before the test. Subsequently, we conducted a clinical investigation on two patients fulfilling the *DSM-5* criteria for hoarding disorder. These patients were treated with atomoxetine 40–100mg for 12 weeks. A history of adult or childhood ADHD was excluded through the diagnostic interview DIVA 2.0. No changes in the ongoing medications or psychotherapy were allowed during the treatment period. To measure the severity of hoarding, the UCLA Hoarding Severity Scale (UHSS) was administered before and after the treatment. Full response was defined as a greater than 35% decrease in UHSS score, and partial response was defined as a greater than 25% decrease in UHSS score. **Results:** Atomoxetine significantly reduced the number of buried marbles in a dose-dependent manner in comparison to control mice, without affecting locomotor activity. Atomoxetine (30 and 60mg/kg) significantly reduced the number of buried marbles in a dose-dependent manner (12.3±1.0 and 10.0±1.8, respectively) in comparison to control mice (19.3±1.0), without affecting the locomotor activity. Atomoxetine 10mg/kg was not effective (21.3±0.9).Results from the first five atomoxetine-treated patients showed that three were classified as full responders and two as partial responders after 12 weeks of treatment. Atomoxetine was well tolerated during all the treatment period. **Conclusion:** These preclinical and clinical data suggest that atomoxetine may be considered a potentially effective compound for

hoarding disorder. Therefore, atomoxetine should be considered for future controlled trials in hoarding disorder.

NO. 45

DISTRIBUTION OF DISABILITY ATTRIBUTABLE TO MENTAL AND BEHAVIORAL DISORDERS DUE TO PSYCHOACTIVE SUBSTANCES IN CHINA

Lead Author: Qi Guo, Ph.D.
Co-Author(s): Yueqin Huang

SUMMARY:

Objective: Provide evidence for strategy and measurement related to disability rehabilitation, by analyzing the prevalence of disability attributable to mental and behavioral disorders due to psychoactive substances and their distribution in China. **Methods:** Using a descriptive epidemiological method, the data of the Second National Sampling Survey on Disability in 2006 were analyzed to show the prevalence rate of disability attributable to mental and behavioral disorders due to psychoactive substances and their distribution by population and region and severity of the disability. Results: The prevalence rate of disability attributable to mental and behavioral disorders due to psychoactive substances was 0.17â€° (419/2,526,145). The prevalence rate in males was 15.5 times higher than in females. The prevalence rate in the divorced was 7.1 times higher than in the married. The prevalence rate in the unemployed was 1.8 times higher than in the employed. The prevalence rate in the illiterate was 3.7 times higher than in those with a high school and higher education. Concerning prevalence of disability attributable to mental and behavioral disorders due to psychoactive substances in different provinces, the top five provinces were Guangdong (0.63â€°), Yunnan (0.52â€°), Zhejiang (0.37â€°), Sichuan (0.34â€°) and Guizhou (0.30â€°), respectively. Among the disabilities attributable to mental and behavioral disorders due to psychoactive substances, proportions of mild, moderate, severe and extremely severe psychiatric disability accounted for 74.2%, 11.5%, 9.2% and 5.0%, respectively. There were 357 disabled people without multiple disabilities. Among them, 33.3% had severe and extremely severe impairments in function of daily activities. **Conclusion:** Prevalence rates of disability attributable to mental and behavioral disorders due to psychoactive substances vary greatly between populations and regions. The disabled have the most severe impairments in daily activities among all kinds of function.

NO. 46

WITHDRAWN

NO. 47

ANTIDEPRESSANT ADHERENCE AND PREVENTION OF SUICIDAL IDEATION

Lead Author: Fady Henein, M.D.
Co-Author(s): Deepak Prabhakar, M.D., M.P.H., Edward Peterson, Ph.D., Karen Wells, M.P.H., L. Keoki Williams, M.D., M.P.H., Brian Ahmedani, Ph.D.

SUMMARY:

Background: Previous studies indicate that antidepressants, including selective serotonin reuptake inhibitors (SSRIs), might be associated with an increased risk of suicidal ideation and behavior among youth. In 2004, the FDA ordered all manufacturers of antidepressant medications to add a black box warning indicating that they may increase suicidality among youth. However, it is uncertain whether antidepressant use is really associated with suicide risk. A recent analysis showed that after the black box warning went into effect, antidepressant prescriptions declined, while suicide attempts simultaneously increased. In addition, uncertainty remains regarding the risk of suicidal ideation among adults using antidepressant medication and whether suicide outcomes depend on antidepressant class, prescribed dose and duration of use. This study examines whether antidepressant medication use over a one-year period is associated with a heightened or lower risk of suicidal ideation in adults with depression. **Methods:** This study included 323 patients with a clinical diagnosis of major depression and no self-reported suicidal ideation at baseline. Patients received care at a large health system in metropolitan Detroit. All patients filled a prescription for an SSRI or serotonin-norepinephrine reuptake inhibitor (SNRI) before, during and after baseline and follow-up surveys administered one year apart in 2013 and 2014. Suicidal ideation was assessed using the ninth item of the Patient Health Questionnaire (PHQ-9), which has been shown to be predictive of suicidal behavior. Pharmacy claims records were used to estimate a continuous measure of medication availability (CMA), an estimate of antidepressant exposure for the year between surveys. **Results:** Of 226 patients who were receiving SSRIs, 136 were taking SNRIs, and 39 individuals were using both. At the follow-up survey, use of antidepressant medication was associated

with a lower likelihood of suicidal ideation (odds ratio=0.57, p<0.033). Antidepressant exposure remained significantly associated with a lower likelihood of suicidal ideation after adjusting for patient age, sex, race/ethnicity and baseline depression severity (adjusted odds ratio=0.52, p<0.025). **Conclusion:** Our findings suggest that antidepressant medication exposure is inversely associated with suicidal ideation. However, treatment decisions should consider the observational nature of these data and the generalizability of a single health system's experience. Nevertheless, our findings justify future research to attempt to replicate these results.

NO. 48

THE USE AND VALUE OF THE SEVEN-ITEM BINGE EATING DISORDER SCREENER IN CLINICAL PRACTICE

Lead Author: Barry K. Herman, M.D.

Co-Author(s): Linda S. Deal, M.Sc., Dana B. DiBenedetti, Ph.D., Lauren Nelson, Ph.D., Sheri E. Fehnel, Ph.D., T. Michelle Brown, Ph.D.

SUMMARY:

Background: The Seven-Item Binge Eating Disorder Screener (BEDS-7) is a validated, patient-reported clinical screener for adults suspected of having binge eating disorder (BED). **Objective:** Evaluate physician knowledge of and attitudes about BED and describe the value and ease of use of the BEDS-7 in clinical practice. **Methods:** Two Internet surveys (wave 1: April 15–May 6, 2015; wave 2: August 19–25, 2015) were administered to general practitioners (GPs) and psychiatrists. Wave 1 invitees were randomly selected from a panel of licensed, U.S.-based physicians who spent 50% or more of their time in direct patient care and who reported "no" to "some to average" experience with patients with eating disorders. After completing wave 1, respondents qualified to complete wave 2. The surveys assessed BED knowledge, BED beliefs and attitudes, and the value and ease of use of the BEDS-7. In addition to descriptive statistics, t tests compared continuous variables, and chi-square or Fisher exact tests compared categorical variables. **Results:** A total of 245 physicians (122 GPs; 123 psychiatrists) completed both waves. Composite BED knowledge (percent correct) increased significantly from wave 1 to wave 2 in GPs (52.4% to 58.4%, p<0.001) and psychiatrists (70.1% to 73.3%, p<0.05), with GPs' knowledge being lower than psychiatrists' (p<0.001 for both waves). Mean±SD composite belief scores about the importance of BED (maximum score=6; higher score=more belief) were high and comparable in GPs and psychiatrists in both waves (range, 5.14±1.3 to 5.40±0.9). Mean±SD composite comfort scores (maximum score=6; higher score=more comfort) were significantly lower in GPs than psychiatrists in both waves (wave 1: 3.34±1.6 vs. 4.47±1.3, p<0.001; wave 2: 3.06±1.7 vs. 4.37±1.4, p<0.001). The BEDS-7 was used by 32% (39/122) of GPs and 26.8% (33/123) of psychiatrists. During wave 1, larger percentages of BEDS-7 users than nonusers reported that they anticipated the BEDS-7 would be "very valuable" (GPs: 82.1% vs. 37.3%, p<0.001; psychiatrists: 54.5% vs. 34.4%); all BEDS-7 users reported the BEDS-7 to be "very valuable" or "somewhat valuable" during wave 2. During wave 1, larger percentages of BEDS-7 users than nonusers reported that they anticipated the BEDS-7 would be "very easy" to use (GPs: 53.8% vs. 38.6%; psychiatrists: 60.6% vs. 45.6%); all BEDS-7 users reported the BEDS-7 to be "very easy" or "reasonably easy" during wave 2. A majority of BEDS-7 users reported that important uses of the BEDS-7 included assisting clinicians in identifying patients with BED (71.8% and 87.9%) and encouraging/initiating doctor-patient discussions about BED (71.8% and 66.7%). **Conclusion:** Knowledge of and comfort with BED were higher in psychiatrists than in GPs, but both physician groups acknowledged the importance of BED. Among GPs and psychiatrists who used the BEDS-7, it was reported to be a highly valued, easy-to-use screener for BED. This research was sponsored by Shire Development, LLC.

NO. 49

ADHERENCE AND INSIGHT INTO THE NEED FOR MEDICATION IN SCHIZOPHRENIA: PERSPECTIVE OF ANTIPSYCHOTIC CLINICAL TRIAL PARTICIPANTS

Lead Author: Marla Hidalgo, D.O.

Co-Author(s): Srinath Gopinath, M.B.B.S., Jeremy Weedon, Ph.D., Nina Schooler, Ph.D.

SUMMARY:

Adherence to treatment regimens is a widely studied barrier in working with patients diagnosed with schizophrenia. Nonadherence can lead to negative outcomes, including increased rates of psychiatric hospitalization and poorer life satisfaction. While there are multiple factors that may contribute to a patient's adherence to their psychiatric treatment regimens, the impact of patient insight has yielded inconsistent results. This study evaluated the relationship of insight and treatment adherence in

patients who have agreed to participate in a trial comparing an oral versus a long-acting injectable antipsychotic. Two hundred subjects who were part of the Preventing Relapse Oral Antipsychotics Compared to Injectables Evaluating Efficacy (PROACTIVE) study were assessed at study entry for insight using the Modified Scale to Assess Unawareness of Mental Disorder (M-SUMD) and treatment adherence. We hypothesized a significant relationship between participants' degree of insight and their reported adherence to prescribed psychotropic medication regimens at study entry, controlling for key patient characteristics. Four measures related to adherence were available: adherence behavior (the regularity with which medication was taken), supervision and support for taking medication, number of medications prescribed, and number of times per day that medications were taken. We carried out logistic regression analyses with each of these four measures averaged over the first three study visits as the dependent variables. Gender, number of prior psychiatric hospitalizations, and awareness of need for medication and awareness of symptomatic response to medication from the M-SUMD and their interactions were entered as predictors. Awareness of need for medication was significantly related to regularity of medication adherence among those with more than two prior hospitalizations (p=0.010). Awareness of response to medication was significantly related to amount of supervision needed among those with more than two hospitalizations (p=0.012) and to the number of times per day the patient took medications (p=0.005). Measures of adherence behavior and needed supervision are related to different aspects of insight about medication, and these relationships are strongest in those patients who have experienced repeated hospitalizations and obvious consequences of nonadherence.

NO. 50

TWO-YEAR MIRROR IMAGE EVALUATION OF PALIPERIDONE PALMITATE IN AN ENGLISH HEALTH TRUST

Lead Author: Richard E. Hodgson, M.D., M.B.B.S., M.Sc.

Co-Author(s): Aladakatti Chandan, M.B.B.S., Brittany Davenport, B.Sc.

SUMMARY:

Background: Paliperidone palmitate (PP) is a long-acting depot antipsychotic that received marketing authorization in the U.K. in 2011. It is costly compared to first-generation antipsychotics (FGAs), yet there are no independent trials comparing PP with FGAs. Long-acting injections have theoretical advantages over their oral equivalents, but this is difficult to demonstrate in short randomized controlled trials. However, observational studies have demonstrated better outcomes.We examined the effectiveness and use of PP in a mental health trust as well as the characteristics of patients prescribed PP. **Methods:** We identified all patients with a schizophrenia diagnosis prescribed PP in North Staffordshire (population 470,000) since launch and examined records for demography, diagnosis, and bed and medication use. It is unlikely patients were prescribed PP outside the trust. We examined the effectiveness of PP using a mirror image design with bed use as the primary outcome. We examined costs and medication for two years prior to PP prescription and two years after initiation. Statistical analysis was by SPSS v16. **Results:** Eighty patients received PP in a time frame allowing a two-year follow-up. Sixty-six percent were male, and the mean age was 41 years. Over half were detained under the 1983 Mental Health Act. All patients had a significant psychiatric history, and there were no first episode patients. There was a significant reduction in bed occupancy (40 vs. 19 days, p=0.019) and admissions (1.3 vs. 0.3, p=0.0001). The mean dose was 105mg. Lack of effectiveness/poor adherence were the primary reasons for starting PP in 86%. Two patients stopped due to side effects, and 29% stopped due to lack of efficacy. **Conclusion:** Within the limitations of the methodology, our results show a reduction in psychiatric bed use in the year following PP initiation on an intent-to-treat basis. The reduction in bed use equates to a minimum saving of £6,300 per patient. PP at the mean study dose costs £3,769. In reality, the savings may be greater, and our design is likely to underestimate cost savings. It was noticeable that PP was not used as a first-line antipsychotic, and most patients had a significant psychiatric history prior to prescription, including failing to respond to clozapine. A low level of side effects was also noticeable. Whilst clinicians were reserving PP for a more difficult to treat group of patients, it would have been useful to ascertain the effect of PP in first-episode patients to see whether enhanced adherence had longer-term benefits.

NO. 51

A CROSS-SECTIONAL STUDY OF COMMON MENTAL DISORDERS IN COMMUNITY DWELLERS IN BEIJING

Lead Author: Yueqin Huang, M.D., Ph.D., M.P.H.
Co-Author(s): Zhaorui Liu

SUMMARY:

Objective: Describe the prevalence, comorbidity and disease onset years of affective disorder, anxiety disorder and substance use disorder in Beijing. **Methods:** Using multiple-stage stratified sampling, a cross-sectional study was carried out among 3,387 residents aged 16 and over in Beijing in 2010. The Composite International Diagnostic Interview, computer-assisted personal interview (CIDI-3.0-CAPI), was administrated by face-to-face interview in both urban and rural community settings. Statistical descriptive analysis was conducted, resulting in prevalence with age and sex adjusting. **Results:** There were 2,469 respondents in the survey, a 72.9% response rate. Regarding affective disorder, the 30-day prevalence and sex- and age-adjusted prevalence were 0.81% and 0.87%, 12-month prevalence and sex- and age-adjusted prevalence were 3.32% and 3.40%, and lifetime prevalence and sex- and age-adjusted prevalence were 7.21% and 6.55%. The adjusted 30-day, 12-month and lifetime prevalence rates of affective disorder in males and females were 0.80% vs. 0.76%, 3.28% vs. 2.83% and 5.86% vs. 5.89%, respectively. Regarding anxiety disorder, the 30-day prevalence and sex- and age-adjusted prevalence were 3.16% and 3.08%, 12-month prevalence and sex- and age-adjusted prevalence were 3.93% and 3.90%, and lifetime prevalence and sex- and age-adjusted prevalence were 5.95% and 6.37%. The adjusted 30-day, 12-month and lifetime prevalence rates of anxiety disorder in males and females were 2.18% vs. 3.17%, 2.69% vs. 4.18% and 4.57% vs. 6.55%, respectively. Regarding substance use disorder, the 30-day prevalence and sex- and age-adjusted prevalence were 0.33% and 0.37%, 12-month prevalence and sex- and age-adjusted prevalence were 1.15% and 1.92%, and lifetime prevalence and sex- and age-adjusted prevalence were 5.30% and 5.58%. The adjusted 30-day, 12-month and lifetime prevalence rates of substance use disorder in males and females were 0.63% vs. 0.16%, 3.63% vs. 0.16% and 11.14% vs. 0.61%, respectively. There was comorbidity among affective disorder, anxiety disorder and substance disorder. The median onset age of anxiety disorder was 15 years, following by 28 years for substance use disorder and 38 years for affective disorder. **Conclusion:** We found that there is one person suffering from affective disorder, anxiety disorder and substance disorder for every nine residents in Beijing. It is particularly concerning that the lifetime prevalence of anxiety disorder in females is higher than in males, the lifetime prevalence of substance use disorder in males is much higher than in females and the lifetime prevalence of affective disorder is similar in both males and females. The results of this study should be enhanced to advocate mental health education and improve prevention and treatment of mental disorders.

NO. 52
WITHDRAWN

NO. 53

A CROSS-SECTIONAL STUDY OF DISABILITY PREVALENCE ATTRIBUTABLE TO AUTISM SPECTRUM DISORDERS AND ITS DISTRIBUTION IN CHILDREN AND ADOLESCENTS IN CHINA

Lead Author: Ning Ji
Co-Author(s): YueQin Huang, Min Chang

SUMMARY:

Objective: Describe the prevalence and distribution of disability attributable to autism spectrum disorders (ASD) in Chinese children and adolescents and to provide population-based evidence for disability rehabilitation. **Methods:** The data for this study were derived from the Second China National Sample Survey on Disability. A cross-sectional study of descriptive epidemiology was conducted to describe the prevalence and distribution of disability attributable to ASD in 585,679 Chinese children and adolescents aged 2–17. Of them, there were 88,716 in the 2–3 age group, 84,411 in the 4–6 age group and 412,552 in the 7–17 age group. **Results:** There were 124 children and adolescents diagnosed with a disability attributable to ASD, in which 17 were in the 2–3 age group, 46 were in the 4–6 age group, and 61 were in the 7–17 age group. The prevalence of disability attributable to ASD in children and adolescents was 2.12 per 10,000 people, and the prevalence rates in children aged 2-3, 4-6 and 7-17 were 1.92, 5.45 and 1.48 per 10,000 people, respectively. The prevalence of disability in males was significantly higher than in females (2.81/10,000 vs. 1.48/10,000, $p<0.001$), and there was no significant difference between the prevalence rates in rural and urban areas (2.11/10,000 vs. 2.13/10,000, $p>0.05$). Meanwhile, there was no significant difference in various Chinese

nationalities. The proportion of disability attributable to SAD was 11.8% among those with metal disabilities aged 2–17. Respectively, 22.1% and 22.4% of mentally disabled children aged 2–3 and 4–6 were attributed to ASD. **Conclusion:** ASD makes one of the major contributions to mental disability in preschool children in China.

NO. 54

EXPECTED AND UNEXPECTED FINDINGS IN A STUDY OF DEPOT MEDICATION

Lead Author: Per-Axel L. Karlsson, Ph.D.
Co-Author(s): Zandra Nyman, Therese Wahlroos, Peter Fjällström, Lisa Marklund

SUMMARY:
Around five percent of the population has severe psychiatric disorders. One-fifth of these have schizophrenia, a chronic psychotic condition with periods of exacerbations/relapses that worsen the cognitive function of the patient. Relapse is counteracted by continuous medical treatment—methods that can slow the disease, but without good medical treatment, most patients have a relapse within two years. Exacerbations lead to decreased function regarding studies, work and relations, which leads to further isolation and increased symptoms. Drug abuse speeds up the ongoing brain damage and personality change and worsens the already impaired adherence to treatment. Very few patients can work for a living, and one-third demand special care; therefore, the medicine that works is cost efficient. We already know that bad cooperativeness/bad adherence increases days in hospital care, increases costs in health expenditures, decreases the amount of cortical tissue in the brain, raises the suicidal rate and raises the number of deaths, regardless the cause. Critical for a positive result is an optimized medical treatment, and the first years after onset are the most perilous regarding the risk for a chronic course of illness. Using depot formula causes 60% fewer dropouts and reduces relapse rate by 65%. Finding a good medication that can work as a cornerstone in the treatment is very important. The best advice clinicians and researchers can give is to first try second-generation antipsychotics before trying first-generation antipsychotics. Best practice is to continue with the medicine that works and give it as a depot formula. Since 2010, more than 30 patients enrolled, and over 2,000 registered injections in a study of Zypadhera in íjebyn, county of Norrbotten, Sweden. Unexpectedly, a large number of patients actually lost weight during the study. Very few suffered side effects, with only one full postinjection syndrome (the patient is still on medication with Zypadhera) and another partial postinjection syndrome with sedation and mild confusion. Participation in a multicenter mirror study of hospital days and economic aspects of health during long-term treatment showed that fewer hospital days followed treatment with olanzapine pamoat (163 days before, 119 days after), with an estimated saving of over 1.2 million SEK.

NO. 55

SOFT SIGNS—A CLINICAL REALITY! NEUROLOGICAL SOFT SIGNS IN PATIENTS WITH SCHIZOPHRENIA, SCHIZOAFFECTIVE DISORDER AND BIPOLAR DISORDER

Lead Author: Per-Axel L. Karlsson, Ph.D.
Co-Author(s): Alexander Vasilis Zizanis, Nils Karlsson, John Olofsson, Anna Jonsson, Viktor Holmdahl

SUMMARY:
The Neurological Evaluation Scale (NES) has earlier shown positive correlation with patients suffering from schizophrenia, schizoaffective disorder and bipolar disorder. Our study compared our results with earlier studies. Luckily, we managed to include a large number of participants and found that higher scores correlated well with the diagnoses of schizophrenia, schizoaffective disorder and bipolar disorder, separating controls both with and without diagnosis of serious mental disorder. This implies that the diagnoses of schizophrenia, schizoaffective disorder and bipolar disorder have neurological aspects. However, there is a big variance and a considerable overlap, which suggest that this test is not diagnostic, but can be of great value in differential diagnostics. Several studies have shown that there are common genetic markers for schizophrenia and bipolar disorder and significant neurological deviances for both disorders. In a meta-analysis, researchers found a strong genetic link between the two. The Kruskal-Wallis Test showed statistically significant differences between the three groups in all NES subscales (total score $p=0.00000065$, sensory integration $p=0.000039$, motoric coordination $p=0.0041$, complex motor sequences $p=0.00036$, remaining items $p=0.00094$).The following analysis using Mann-Whitney-Wilcoxon's U-test showed statistically significant difference between the control group and the schizophrenic-bipolar-schizoaffective patients in all NES subscales and also between the control

group and the other patient group regarding total NES-score and the subscore of sensory integration. There is a definite, statistically relevant difference between the control group and the schizophrenia, schizoaffective or bipolar diagnoses, both in total score and over all subcategories, which is in line with earlier observations linking schizophrenia with the occurrence of many soft signs. This is in contrast to the group consisting of patients with other diagnoses, which showed significant differences compared to healthy controls only for total score and sensory integration.

NO. 56

ECT AUGMENTATION IN SCHIZOPHRENIA—CLINICAL EFFECTIVENESS AND COGNITIVE IMPACT: A LARGE RETROSPECTIVE REVIEW

Lead Author: Tyler Kaster, M.D.
Co-Author(s): Zafiris J. Daskalakis, M.D., Ph.D., Daniel M. Blumberger, M.D., M.Sc.

SUMMARY:

Objective: Describe the clinical effectiveness and cognitive effects of ECT in a large clinical sample of patients with schizophrenia and explore factors associated with treatment response and adverse cognitive effects. **Background:** There is limited evidence describing the clinical effectiveness of electroconvulsive therapy (ECT) in patients with schizophrenia. Many studies describing its use employed older equipment combined with first-generation antipsychotics that do not reflect current clinical practice. **Methods:** We examined the clinical records of 144 patients with a clinical diagnosis of schizophrenia or schizoaffective disorder who received 171 acute courses of ECT and determined treatment response (TR) and adverse cognitive effects (ACE). We explored the impact of various factors associated with TR and ACE, including ECT indication, clinical characteristics, medication during ECT and technical parameters. **Results:** Treatment with ECT resulted in a 76.7% response rate. Factors associated with TR were lack of concomitant antiepileptic medication (17.9% vs. 3.9%, p=0.0071), a previous good response to ECT (36.4% vs. 15.4%, p=0.0174) and primary indication for ECT other than failed pharmacotherapy (89.7% vs. 69.8%, p=0.0174). Factors not associated with TR included age (p=0.1355), clozapine treatment (p=0.8552) and benzodiazepine treatment (p=0.4887). Treatment with ECT was associated with clinically detectable ACE in nine percent of patients, and no other clinical factors were associated with ACE. **Conclusion:** This work demonstrates the clinical effectiveness of ECT for the treatment of schizophrenia. Several clinical factors may be associated with TR. The rate of clinically detectable ACE was lower than expected based on the rates of ACE when ECT was used for patients with depression. While ECT appears to be an effective treatment option for schizophrenia, further comparative effectiveness research is needed in this population to delineate its role in clinical practice.

NO. 57

FASTER RECURRENCE RELATED TO EPISODE ACCUMULATION IN BIPOLAR DISORDER

Lead Author: Terence A. Ketter, M.D.
Co-Author(s): Dong Yeon Park, M.D., Saloni Shah, B.A., Laura Yuen, Farnaz Hooshmand, M.D., Bernardo Dell'Osso, M.D., Shefali Miller, M.D., Po W. Wang, M.D.

SUMMARY:

Objective: Investigate the effect of number of prior mood episodes on time to mood episode recurrence and related mediating factors among bipolar disorder (BD) patients. **Methods:** Stanford Bipolar Disorder Clinic outpatients enrolled during 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and monitored longitudinally with the STEP-BD Clinical Monitoring Form while receiving naturalistic treatment. Among recovered (euthymic at least two months) patients, survival analyses evaluated the effects of having 10 or more versus fewer than 10 prior mood episodes on times to depressive, mood elevation and any mood episode recurrence; Cox proportional hazard analyses assessed potential mediators. **Results:** BD outpatients with 10 or more prior mood episodes were more than twice as often currently depressed (71.8% vs. 28.2%, p<0.0001) versus those with fewer than 10, and although similarly often were currently recovered (51.1% vs. 48.9%, p=nonsignificant), when recovered, patients with more mood episodes had significantly higher depressive (46.7% vs. 24.4%, p=0.04) and any (66.7% vs. 41.5%, p=0.03) mood episode recurrence rates and shorter times to depressive (log rank p=0.012) and any (log rank p=0.003) mood episode recurrence. Lifetime anxiety disorder (hazard ratio=4.1, p=0.001) and prior year rapid cycling (hazard ratio=3.7, p=0.012) mediated earlier depressive (but not any) mood episode recurrence. This study was limited to an American tertiary bipolar disorder clinic referral sample.

Conclusion: Additional studies are needed to confirm our observation that patients with 10 or more versus fewer than 10 mood episodes had more often and more rapid depressive and any mood episode recurrence, with the former mediated by history of anxiety disorder and prior year rapid cycling.

NO. 58

DIFFICULTIES IN MANAGING ALCOHOL WITHDRAWAL DELIRIUM IN A PATIENT WITH A HISTORY OF SCHIZOPHRENIA

Lead Author: Andrey Khalafian, M.D.
Co-Author(s): Phebe Tucker, M.D., Charles Dukes, M.D., Britta Ostermeyer, M.D.

SUMMARY:
Mr. M., a 55-year-old African-American male with a past psychiatric history of schizophrenia and alcohol use disorder, presents to the psychiatric consult service with recent onset of altered mental status, incoherent speech and picking movements. The patient had stopped drinking alcohol two days prior, and his family could only provide a limited history. He was admitted to the inpatient medicine service. The medical team considered the differential diagnosis of alcohol withdrawal delirium, toxic metabolic encephalopathy and medication toxicity. The patient's condition initially worsened. He was continually monitored on the regular floor instead of a critical care setting, with uncertainty whether his symptoms were a result of alcohol withdrawal delirium or schizophrenia. This led to the concern of suboptimal management of his alcohol withdrawal as a result of the stigma of his previous psychiatric diagnosis of schizophrenia, compared to a patient with no prior psychiatric history. Being that alcohol withdrawal is a medical emergency, patients with psychiatric histories presenting with this symptom constellation need to be treated in the same manner as any other patient would be. A thorough medical workup and history gathering can help elucidate the source of the presenting picture in this patient population. In this poster, we discuss the challenges and importance of differentiating psychotic symptom etiology during the treatment of alcohol withdrawal delirium in patients with a previous psychiatric disorder.

NO. 59

DECREASED TASK-POSITIVE NETWORK CONNECTIVITY IN ABSTINENT PATIENTS WITH ALCOHOL DEPENDENCE

Lead Author: Siekyeong Kim, M.D., Ph.D.
Co-Author(s): Sungjin Im, M.D., Ph.D., Jeongwhan Lee, M.D., Sang-Gu Lee, M.D.

SUMMARY:
Heavy alcohol consumption can lead to brain damage, including structural changes and various functional impairments. However, the effects of mild to moderate drinking on the human body and brain are not clear. Many parts of brain damage can be reversed by abstinence if maintained for sufficient periods. Because of this complexity, valid methods for the assessment of brain function, as well as a rational definition for clinical variables about degrees of drinking and abstinence, are important to determine the effect alcohol has on the brain. This study assessed the patterns and degrees of recovery of brain function in abstinent patients with alcohol dependence (AD) by using resting-state functional connectivity magnetic resonance imaging (rs-fcMRI), which is a sensitive and valid method for assessing brain function. Twenty-six male patients with AD (alcohol group) and 28 age-matched healthy volunteers (control group) were recruited from an inpatient mental hospital and community. By using data acquired from a 3T Philips Achieva MRI scanner, as well as conventional methods for the connectivity analysis such as an in-house script consisting of Analysis of Functional NeuroImages (AFNI), FMRIB Software Library (FSL), and FreeSurfer commands, the functional connectivity of established resting-state task-negative and task-positive networks, such as the default mode network (DMN), the dorsal attention network (DAN), the cognitive control network (CCN), the salience network (SAL) and the sensory motor network (SMN), were determined and compared between groups. There were no significant differences between the groups with regard to resting-state functional connectivity in DMN, SAL and SMN. The overall functional connectivity of the alcohol group was significantly decreased in CCN (dorsomedial prefrontal cortex to superior parietal) and in some regions of interest in DAN (medial temporal complex to anterior and posterior intraparietal sulcus). Multiple regression analyses showed that overall connectivity of the cingulo-opercular task control network (COTC) of CCN was inversely associated with age (delta R square=0.19, $p<0.001$) and being in the alcohol group (delta R square=0.06, $p<0.05$). There were some brain networks that did not recover their functions after abstaining from drinking in enough time. Considering that DAN and CCN belong to task-

positive networks related to selective and sustained attention, these results might help future researchers investigate a mechanism for craving and relapse, phenomena that are known to be associated with task-positive networks.

NO. 60

VEGF MAY HAVE A NEUROPROTECTIVE ROLE IN THE IMPROVEMENT OF SCHIZOPHRENIA OR IN THE TREATMENT EFFECTS OF ANTIPSYCHOTICS

Lead Author: Yong-Ku Kim, M.D., Ph.D.
Co-Author(s): Bun-Hee Lee, Jin-Pyo Hong, Byung-Joo Ham, Kyoung-Sae Na, Won-Joong Kim, Jose Trigo

SUMMARY:

Objective: Determine whether or not there was a difference in plasma vascular endothelial growth factor (VEGF) levels between patients with schizophrenia and healthy controls. We also explored alterations in plasma VEGF levels in patients with schizophrenia before and after treatment with antipsychotic agents. **Methods:** We examined plasma levels of VEGF in 50 patients with schizophrenia and 50 healthy control subjects. We also explored any changes in plasma VEGF levels after six-week treatment with antipsychotic agents in patients with schizophrenia. All subjects with schizophrenia were either medication-naïve or medication-free for at least four weeks prior to assessment. A trained psychiatrist assessed the psychopathological status of patients using the Positive and Negative Syndrome Scale (PANSS). **Results:** Plasma VEGF levels in all subjects were significantly correlated with smoking duration, which was considered to be a significant covariate. Pretreatment plasma VEGF levels in patients with schizophrenia were significantly lower than in healthy controls. Plasma VEGF levels at baseline were significantly lower in medication-naïve and medication-free patients than in healthy controls ($F(2, 97)=7.779$, $p=0.001$). After controlling for BMI ($p=0.402$) and smoking duration ($p=0.002$), VEGF levels in medication-naïve and medication-free patients were still lower than those in healthy controls ($F(2, 95)=8.181$, $p=0.01$). Post-treatment VEGF levels were significantly increased in patients with schizophrenia. Plasma VEGF levels in patients with schizophrenia did not exhibit significant correlation with the total or subscale scores of the PANSS either at baseline or at the end of the six-week treatment. **Conclusion:** Although the mechanism of VEGF in the pathophysiology of schizophrenia has not yet been explained, it may be that VEGF has a neuroprotective role in the improvement of schizophrenia or in the treatment effects of antipsychotics.

NO. 61

MITOCHONDRIAL DYSFUNCTION AND LIPID PEROXIDATION IN RAT FRONTAL CORTEX BY CHRONIC NMDA ADMINISTRATION CAN BE PARTIALLY PREVENTED BY LITHIUM TREATMENT

Lead Author: Helena K. Kim, Ph.D.
Co-Author(s): Cameron Isaacs-Trepanier, Nika Elmi, Stanley I. Rapoport, Ana C. Andreazza

SUMMARY:

Background: Chronic N-methyl-D-aspartate (NMDA) administration to rats may be used as a model for the investigation of glutamatergic hyperactivity and its downstream effects, including increased release of arachidonic acid and mitochondrial dysfunction, which may be important factors in the pathophysiology of bipolar disorder (BD). We therefore hypothesized that chronic NMDA injections would cause mitochondrial dysfunction and lipid peroxidation in the frontal cortex of rats. Lithium was shown to have neuroprotective effects in part by decreasing downstream targets of glutamatergic hyperactivity. Hence, we also hypothesized that chronic lithium treatment will ameliorate the alterations produced by chronic NMDA treatment. **Methods:** Rats were treated with lithium for six weeks, followed by daily IP injections of 25mg/kg NMDA for the last 21 days of lithium treatment. The frontal cortex was isolated and analyzed for mitochondrial electron transport chain complexes I, III and V. We also measured three products of lipid peroxidation: lipid hydroperoxides, 4-hydroxynonenal and 8-isoprostane, a peroxidation product of arachidonic acid. Data were analyzed using ANOVA or Kruskal-Wallis test as appropriate. **Results:** Chronic NMDA injections decreased levels of mitochondrial complexes I and III and increased levels of 8-isoprostane and 4-hydroxynonenal compared to non-NMDA-injected rats. Lithium prevented NMDA-induced increase in 8-isoprostane and 4-hydroxynonenal. **Conclusion:** Our findings suggest that glutamate-induced excitotoxicity may be contributing to decreased levels of complexes I and III and lipid peroxidation in disorders where glutamatergic hyperactivity is implicated, such as BD. Furthermore, lithium may be exerting its antioxidant effects in part by decreasing glutamate-induced alterations in the frontal cortex.

NO. 62

DISCOVERY OF SERUM PROTEIN BIOMARKERS IN DRUG-FREE PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: Eun Young Kim, M.D., Ph.D.
Co-Author(s): Min Young Lee, Se Hyun Kim, Kyung-Cho Cho, Kyooseob Ha, Kwang Pyo Kim, Yong Min Ahn

SUMMARY:

Background: Major depressive disorder (MDD) is a systemic and multifactorial disorder involving complex interactions between genetic predisposition and disturbances of various molecular pathways. Its underlying molecular pathophysiology remains unclear, and no valid and objective diagnostic tools for the condition are available. **Methods:** We performed large-scale proteomic profiling to identify novel peripheral biomarkers implicated in the pathophysiology of MDD in 25 drug-free female MDD patients and 25 healthy controls. First, quantitative serum proteome profiles were obtained and analyzed by liquid chromatography and tandem mass spectrometry using serum samples from 10 MDD patients and 10 healthy controls. Next, candidate biomarker sets, including differentially expressed proteins from the profiling experiment and those identified in the literature, were verified using multiple-reaction monitoring in 25 patients and 25 healthy controls. The final panel of potential biomarkers was selected using multiparametric statistical analysis. **Results:** We identified a serum biomarker panel consisting of six proteins: apolipoprotein D, apolipoprotein B, vitamin D3-binding protein, ceruloplasmin, hornerin, and profilin 1, which could be used to distinguish MDD patients from controls with 68% diagnostic accuracy. Our results suggest that modulation of the immune and inflammatory systems and lipid metabolism are involved in the pathophysiology of MDD. **Conclusion:** Our findings of functional proteomic changes in the peripheral blood of patients with MDD further clarify the molecular biological pathway underlying depression. Further studies using larger, independent cohorts are needed to verify the role of these candidate biomarkers for the diagnosis of MDD.

NO. 63

A COMPARISON OF CLINICAL AND SOCIODEMOGRAPHIC CHARACTERISTICS OF ELDERLY AND NONELDERLY SUICIDE ATTEMPTERS

Lead Author: Hyun Kim, M.D., Ph.D.
Co-Author(s): Kang Joon Lee

SUMMARY:

Objective: Identify the clinical and sociodemographic characteristics of elderly suicide attempters visiting the emergency room as compared to nonelderly adult suicide attempters. **Methods:** We enrolled suicidal attempters who were treated in the emergency room of the Inje University Ilsan Hospital between June 2013 and July 2015. We conducted a retrospective chart review of 335 suicide attempters and compared sociodemographic and clinical characteristics between elderly and nonelderly adult suicide attempters. **Results:** During the study period, 335 patients visited the emergency room of the medical center after suicide attempts. Among these, there were 71 elderly (21.2%) and 265 nonelderly adult (79.8%) suicide attempters. The rates of suicidal method among elderly were poisoning (73.3%), hanging (19.7%), cutting (5.6%) and jumping (1.4%). Those in nonelderly attempters were poisoning (73.2%), cutting (17.0%), hanging (6.8%) and jumping (3.0%). The elderly suicide attempters had the tendency to choose more dangerous methods and showed higher lethality compared to nonelderly adult suicide attempters (20.6% vs. 1.9%, χ^2=34.565, p<0.05). On the other hand, premorbid psychiatric disorders had been more commonly diagnosed in nonelderly adults than elderly suicide attempters (49.8% vs. 26.8%, χ^2=12.024, p<0.05). **Conclusion:** The results provide evidence of different clinical and sociodemographic characteristics of elderly suicide attempters compared to nonelderly ones visiting the emergency room. Through this study, it can be seen that the suicide attempt in the elderly tends to be more severe than in the nonelderly, but only a small portion of them seek help from psychiatric intervention. Further study is required to provide effective suicide prevention programs for the elderly population.

NO. 64

EARLY MENARCHE AND RISK-TAKING BEHAVIOR IN KOREAN ADOLESCENCE

Lead Author: Seong Hwan Kim, M.D., Ph.D.
Co-Author(s): Hyun-Soo Kim, M.D., Jae Hong Park, M.D., Ph.D., Pan Kyu Choi, M.D., Ighyun Jo, M.D.

SUMMARY:

Objective: Assess the associations between early menarche and risk-taking behavior in a representative sample of Korean adolescents. **Methods:** Data were drawn from the 2014 Korean

Youth Risk Behavior Web-Based Survey, cross-sectional, national and representative sample of 33,829 female adolescents (grades 7–12). Logistic regression analysis was conducted to test the association between early menarche and risk-taking behavior, controlling for sociodemographic characteristics. **Results:** Early menarche increased risk of smoking, alcohol drinking, other substance use, sexual intercourse, early age at first sexual intercourse, pregnancy and sexually transmitted disease in Korean adolescents. **Conclusion:** Early menarche is significantly associated with risk-taking behavior in adolescents. This finding suggested that early educational intervention is needed for female adolescents with early menarche. **Keywords:** Early Menarche, Risk-Taking Behavior, Adolescent

NO. 65

ASSOCIATION BETWEEN CYTOKINE GENE (IFN-R, TNF-A, IL-10) POLYMORPHISMS WITH PANIC DISORDER

Lead Author: Han-Joon Kim, M.D.
Co-Author(s): Heon-Jung Lee, M.D., Ph.D., Seung-Hyun Kim, M.D., Ph.D., Yong-Ku Kim, M.D., Ph.D.

SUMMARY:

Objective: In this study, we investigated INF-Î³ +874 A/T (rs2430561), TNF-α -308 G/A (rs1800629) and IL-10 -1082 G/A (rs1800896) single nucleotide polymorphisms (SNPs) to determine their association with panic disorder (PD). We also tried to detect differences in subgroups divided by gender and accompanying agoraphobia. **Methods:** This study enrolled 135 PD patients and 135 healthy controls. Genotyping was conducted based on methods reported in a previous study, and statistical analyses included the chi-square test, Fisher's exact test and independent t-test using SPSS version 12.0. **Results:** There were no differences in genotypes or allele frequencies between the patient and control groups, regardless of accompanying agoraphobia. For females, the G allele frequency in IL-10 SNP was higher in the control group than the patient group. Additionally, the female control group had a higher frequency of the A/G and G/G genotypes than the female patient group in IL-10 SNP. **Conclusion:** We suggest that the G allele in IL-10 -1082 G/A might have a role in lowering PD's manifestations in females. Further studies are needed to extend and confirm our findings.

NO. 66

COMBINATION OF MAINTENANCE ELECTROCONVULSIVE THERAPY (ECT) AND CLOZAPINE IN A PATIENT WITH REFRACTORY SCHIZOPHRENIA: A CASE REPORT

Lead Author: Chul-Eung Kim, M.D., Ph.D.
Co-Author(s): Se-Ri Maeng, M.D.

SUMMARY:

Background: Twenty-five percent of patients suffering from schizophrenia cannot be treated adequately with either antipsychotics or clozapine. Adjunctive treatment with ECT is one option for clozapine non-responders. This case report describes the efficacy and tolerability of maintenance ECT in combination with clozapine in a refractory schizophrenia patient. **Case:** Ms. L. is a 35-year-old woman who was diagnosed with schizophrenia, paranoid type, according to *DSM-IV* criteria and was admitted to the hospital for one month at age 18. After discharge, she graduated from college and worked as an aid nurse. At age 21, she was readmitted because of exacerbated auditory hallucinations and persecutory delusions. Prior to her most recent hospitalization, she had been marginally adapted but unstable with repeated hospitalizations. Despite two months of treatment with clozapine up to 500mg/day combined with other antipsychotics, her Global Assessment of Functioning score was 21. To improve psychotic symptoms, modified ECT was performed. The first series of acute ECT was three times a week for four weeks, and her clozapine dosage was tailed down to 300mg/day. She was discharged after two months, and bilateral modified ECT continued once a week. The subsequent monthly continuation ECT resulted in continued improvement, and clozapine dosage was reduced to 200mg/day. After 20 times of monthly continuation ECT, she refused to continue her treatment, unfortunately. As a result, persecutory delusions and aggressive behaviors got worse. With a rehospitalization, her pharmacological treatment dosage was increased, and modified ECT three times/week for two weeks was started again. Her psychotic symptoms improved rapidly, so we decided to continue the bilateral modified ECT once every other week after discharge. Continuation ECT combined with clozapine resulted in a good clinical improvement with no significant adverse effects. **Discussion:** The main benefit of ECT combination seemed to be an acceleration of treatment response. About 75% of patients appeared to improve markedly with this combination. Up to 20 treatments with bilateral ECT could increase the

chances of a positive outcome for patients clearly resistant to conventional antipsychotics. After achieving remission with an acute ECT, a patient will need further ECT spaced at longer intervals over three weeks in order to consolidate remission. There is no single maintenance ECT schedule that is best for all patients. ECT schedule and clozapine augmentation dose should be flexible and adjusted to the needs of the patient. **Conclusion:** Combining ECT and clozapine in patients with refractory schizophrenia seems effective and well tolerated. Also, there were no significant side effects such as memory impairment and seizure prolongation. As ECT cut off, our patient soon relapsed into psychotic symptoms. Therefore, clinicians need to decide proper treatment duration of ECT and monitor closely.

NO. 67

EPIGENETIC REGULATION OF THE GLUCOCORTICOID RECEPTOR PROMOTER 17 IN MATERNALLY DEPRIVED AND RESTRAINED ADULT RATS

Lead Author: Young Hoon Kim, M.D., Ph.D.
Co-Author(s): Mi Kyoung Seo, Ph.D., Nguyen Ngoc Ly, B.S., Chan Hong Lee, M.S., Hye Yeon Cho, M.S., Le Hoa Nhu, B.S., Cheol Min Choi, B.S., Jung Goo Lee, M.D., Ph.D., Bong Ju Lee, M.D., Ph.D., Gyung-Mee Kim, M.D., Baik Seok Kee, M.D., Ph.D., Sung Woo Park, Ph.D.

SUMMARY:

Objective: The glucocorticoid receptor (GR) promoter I7 has proven to be susceptible to epigenetic changes by environmental influence. Early life stress (ELS) has a persistent impact on GR expression and behavior through epigenetic mechanisms of exon I7 GR promoter in adult rodents. In adulthood, various stressors also induce histone modifications. We investigated if postnatal maternal deprivation (MD group), adult restraint stress (RS group) and the two type of stress applied together (MD+RS group) could affect epigenetic changes of GR promoter 17 in the hippocampi of rats. **Methods:** Rats were subjected to maternal deprivation on postnatal days (PND) 1–21. In adulthood (PND 56–77), rats were exposed to restraint stress followed by escitalopram (10mg/kg) treatment. **Results:** The levels of total and exon I7 GR mRNA were decreased in the MD and RS groups, and the MD+RS group further reduced these levels. These patterns were associated with decreased levels of acetylated histone H3 at exon I7 GR promoter. The expression of DNMT1 and DNMT3a, epigenetic maintainers, was increased in the MD and RS group, and the MD+RS group further increased these levels. Chronic escitalopram treatment recovered the group differences in GR expression, histone acetylation and DNMTs expression. **Conclusion:** Our results indicate that postnatal maternal deprivation and adult restraint stress affect GR expression through histone modification of GR promoter I7, and the combination of the two stresses further potentiates these changes. Furthermore, these epigenetic mechanisms are involved in escitalopram action. **Keywords:** Epigenetic Mechanism, Maternal Deprivation, Restraint Stress, Glucocorticoid Receptor, Hippocampus, Escitalopram

NO. 68

EFFECTS OF P11 ON BDNF-INDUCED CHANGES IN DENDRITIC OUTGROWTH AND SPINE FORMATION IN PRIMARY HIPPOCAMPAL CELLS

Lead Author: Young Hoon Kim, M.D., Ph.D.
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SUMMARY:

Objective: p11 (S100A10) is a key regulator of depression-like behaviors and antidepressant drug response in rodent models. Recent studies suggest that p11 mediates the behavioral antidepressant action of brain-derived neurotrophic factor (BDNF) in rodents. BDNF improves neural plasticity, which is linked to the cellular actions of antidepressant drugs. In this study, we investigated p11-regulated BDNF action on neural plasticity in vitro. **Methods:** We generated primary hippocampal cultures. p11 expression, dendritic outgrowth and spine formation were investigated under toxic conditions induced by B27 deprivation, which causes hippocampal cell death. **Results:** B27 deprivation significantly decreased p11 expression. Treatment with BDNF significantly prevented the B27 deprivation-induced decrease in p11 levels in a concentration-dependent manner, whereas these concentrations had no effect on control cultures. B27 deprivation significantly reduced the total outgrowth of hippocampal dendrites and spine number. BDNF increased dendritic outgrowth and spine number in conditions with or without B27. Furthermore, p11 knockdown through small interfering RNA (siRNA) transfection blocked these effects. Specially, overexpression of

p11 in B27-deprived cells increased dendritic outgrowth and spine number, and treatment with BDNF potentiated these effects. **Conclusion:** Taken together, our data suggest that BDNF-induced improvement in neural plasticity may depend on the regulation of p11 in hippocampal cells. These results provide evidence to strengthen the theoretical basis of a role for p11 in BDNF-induced antidepressant action. **Keywords:** p11, BDNF, Hippocampus, Dendritic Outgrowth, Spine Formation

NO. 69

PREVALENCE OF DEPRESSION AND ANXIETY IN PHASE I CLINICAL TRIAL ONCOLOGY PATIENTS AT AN ACADEMIC CANCER CENTER: A PILOT STUDY

Lead Author: Natalie Kurkjian, M.D.
Co-Author(s): Phebe Tucker, M.D.

SUMMARY:

Background: Studies show a high prevalence of depression and anxiety in cancer patients, especially lung, gynecological, breast and colorectal cancers. One study reported that 73% of those with major depression were not receiving any treatment. Few studies have determined the prevalence of depression, anxiety and mental health treatments in phase I clinical trial oncology patients, who have often not responded to traditional cancer treatments. **Objective:** This resident-initiated pilot study assesses depression and anxiety symptom levels and corresponding treatments in phase I clinical trial patients at an academic cancer center. We also assessed current treatments with antidepressant and/or anxiety medications and counseling, as well as patients' perceptions of their unmet mental health needs. **Methods:** Patients completed an anonymous survey during phase I clinical trial oncology visits. Most (approximately 80%) were in gynecological oncology studies. The Patient Health Questionnaire (PHQ-8) assessed major depression symptoms, and the Generalized Anxiety Disorder Scale (GAD-7) assessed anxiety. Preliminary data were analyzed in this ongoing study. **Results:** In a pilot sample of 25 patients, average age was 59.9 (SD=13.2), with 96% of respondents female. Average PHQ-8 score was 4.32—none to minimal depression. Mean GAD-7 score was 2.56—no provisional anxiety diagnosis. Ten participants (40%) were on psychotropics. Of nine respondents (36%) who were on antidepressant therapy, average PHQ-8 score was 4.88 (ranging from 1 to 10). Among eight (32%) on anxiety therapy, average GAD-7 score was 3.75 (ranging from 0 to 15), with three respondents scoring 1. The average GAD-7 scores for patients on antidepressants was 2.22, and average GAD-7 score for six patients on both medications was 1.16. When asked if they would like more mental health services, nine (36%) responded positively, five of these on psychotropics. Seven (28%) endorsed unmet mental health needs while receiving oncological services, four on psychotropics. For two not on any medications, PHQ-8 scores were 7 and 9—mild depression—and both had GAD-7 scores of 7—mild anxiety. Two respondents were in counseling; one, on no psychiatric medications, reported no unmet mental health needs, with a PHQ-8 score of 0 and a GAD-7 of 2. The other, on anxiety medications, reported unmet mental health needs; her PHQ-8 score was 13 (moderate) and GAD-7 was 15 (moderate). **Conclusion:** Responding phase I clinical trial oncology patients had low depression and anxiety scores, and many (40%) were receiving psychiatric medications. Among those receiving treatment, PHQ-8 and GAD-7 scores were low for depression and anxiety. These preliminary findings suggest that respondents with refractory cancer were often receiving psychiatric treatments that have been mostly effective for depression and anxiety. Following patients over time would determine if ratings change with treatment and cancer severity.

NO. 70

PHARMACOGENETICS OF LITHIUM RESPONSE IN BIPOLAR DISORDER IN A GENETICALLY-ISOLATED POPULATION OF LATIN AMERICA

Lead Author: Carlos López-Jaramillo, M.D., Ph.D.
Co-Author(s): Ana María Díaz-Zuluaga, Ana Lucía Miranda-Angulo, Juan David Palacio, Cristian Vargas, Thomas G. Schulze

SUMMARY:

Background: Lithium remains a first-line treatment in the therapy of bipolar disorder (BD). However, individual response is variable, and some studies have suggested that lithium response is a heritable trait. Genetic studies in a genetically isolated and thus potentially more homogenous population like the Paisa of Antioquia Province in northwestern Colombia may help detect common and rare genetic variation underpinning a trait like lithium response. **Objective:** Investigate a potential association between a select number of genetic variants previously found associated with lithium response in BD and in the Paisa population. **Methods:** We are

studying 200 BD type 1 patients from the Paisa population who have been treated with lithium for at least one month. They will be comprehensively phenotyped using the Diagnostic Interview for Genetic Studies (DIGS), the Young Mania Rating Scale (YMRS), the Hamilton Rating Scale for Depression (HAMD) and the Alda Scale for lithium response. We will perform standard genetic association studies on variants previously found to be associated with lithium response in the Consortium on Lithium Genetics sample and other studies. **Results:** This is an ongoing pharmacogenetic study in a genetic isolate. We will investigate if variants implicated in lithium response in BD are also of relevance in this particular population. **Keywords:** Pharmacogenetics, Bipolar Disorder, Lithium, Paisa Population

NO. 71
WITHDRAWN

NO. 72
DOUBLE-BLIND COMPARISON OF VILAZODONE AND PAROXETINE IN GERIATRIC DEPRESSION
Lead Author: Helen Lavretsky, M.D.
Co-Author(s): P. Siddarth, N.M. St Cyr, L. Ercoli

SUMMARY:
Objective: We performed a pilot study of vilazodone designed to determine if there are any differences in the effect sizes between vilazodone and paroxetine and to assess comparative tolerability in older depressed adults. As exploratory analyses, we will also look at genomic markers of inflammation and telomerase activity in the two groups to explore potential biomarkers, as well as to assess any differences in tolerability and safety. **Methods:** Fifty-six nondemented older adults diagnosed with major depression were randomized to receive vilazodone [n=26] or paroxetine [n=30] during a 12-week double-blind trial. Paroxetine daily doses ranged between 10–30mg (mean=27.20, SD=6.78); Vilazodone effective daily dose was 40mg per day. Efficacy was measured using the Hamilton Depression Rating Scale (HAMD). **Results:** There were no baseline differences between the groups in demographic and clinical variables. There were no significant between-group differences in depressed mood symptoms. Effect size estimates indicated that, overall, the vilazodone group subjects showed increased improvement in mood compared to the paroxetine group (-2.25 vs. -1.31 on HAMD), accompanied by greater improvement in health-related quality of life (SF-36 scales). However, the paroxetine group showed greater improvement in several cognitive measures compared to vilazodone, with significant differences in the measures of attention and executive function. Of the completers in the paroxetine group, 17 reported mild side effects (mean of 1.4 side effects (SD=1.2)), and 16 reported some side effects (mean of 1.4 side effects (SD=1.2)). There are no significant between-group differences in cardiovascular risk factor (CVRF), resilience (AES), Unified Parkinson's Disease Rating Scale (UPDRS) or Cumulative Illness Rating Scale (CIRS) scores. **Conclusion:** Both treatment groups demonstrated improvement in depression, health-related quality of life and cognition. However, the vilazodone group had greater improvement in depression and quality of life, and the paroxetine group had greater improvement in several cognitive measures of attention and executive function. This pilot trial should inform future larger trials of geriatric depression.

NO. 73
HIGH USE OF PSYCHOTROPICS OVERDOSE AMONG SUICIDE ATTEMPTERS IN KOREA
Lead Author: Kyoung-UK Lee, M.D.
Co-Author(s): Jinyoung Kim, Minseob Kim, Yoo-ra Kim, Kyoung Ho Choi

SUMMARY:
Objective: The availability of suicide methods affects the risk of suicide attempts. This study examined the patterns of substances ingested by suicide attempters (SAs) and the characteristics of SAs using psychotropic overdose. **Methods:** Data for 384 of the 462 eligible SAs who used self-poisoning were analyzed. Demographic variables, clinical characteristics and factors related to the suicide attempts were examined. **Results:** There were 256 (66.7%) females and 128 (33.3%) males. Roughly half of the SAs ingested psychotropics (n=179, 46.6%). Agricultural chemicals (n=84, 21.9%) were the second most frequently ingested substance, followed by analgesics (n=62, 16.1%), household products (n=27, 7.0%) and other prescribed medications (n=23, 6.0%). Among psychotropics, the most frequently overdosed drugs were sedative-hypnotics, including hypnotics (n=104) and benzodiazepines (n=78). SAs favored Z-drugs and alprazolam. When compared with SAs with non-psychotropic overdoses, significantly more SAs with psychotropic overdoses were female (76% vs. 58.5%, $p<0.001$) and had a psychiatric history (59.8% vs.

29.8%, p<0.001). They had significantly more previous suicide attempts (0.52±1.02 vs. 0.32±0.80, p<0.05) and lower risk (7.96±1.49 vs. 8.44±1.99, p<0.01) and medical severity (3.06±0.81 vs. 3.37±0.93, p<0.005) scores. **Conclusion:** Psychotropic overdose, especially with sedative-hypnotics, was a major method in suicide attempts. It is important that psychiatrists carefully evaluate and monitor their patients for suicidality when prescribing psychotropics.

NO. 74

VALIDATION OF THE KOREAN VERSION OF THE CLINICAL ASSESSMENT INTERVIEW FOR NEGATIVE SYMPTOMS

Lead Author: Seung-Hwan Lee, M.D., Ph.D.
Co-Author(s): Seon-Kyeong Jang, Sang-Woo Hahn, Seon-Cheol Park, Jung-Seo Yi, Joong-Kyu Park, Jung Suk Lee, Kee-Hong Choi

SUMMARY:

Objective: Negative symptoms are one symptom category of schizophrenia, considered fundamental and closely related to functional outcome in schizophrenia. The Clinical Assessment Interview for Negative Symptoms (CAINS) has recently been developed to precisely measure negative symptoms and is considered a promising instrument with sound psychometric properties. In this study, we performed multisite studies to validate the Korean version of the CAINS (CAINS-K). **Methods:** 180 schizophrenia patients who were symptomatically stable and had diverse demographic and illness profiles were recruited from four centers. The CAINS-K, the Scale for the Assessment of Negative Symptoms (SANS), the Brief Psychiatric Rating Scale (BPRS), the Calgary Depression Scale for Schizophrenia (CDSS), self-report measures of behavioral inhibition and activation (BIS/BAS), and neurocognitive tasks were administered. **Results:** The CAINS-K showed high internal consistency and inter-rater agreement. Exploratory factor analysis replicated the two-factor structure of the original scale, which includes motivation/pleasure and expression deficits. No gender difference was found in the CAINS-K scores. The CAINS-K showed adequate convergent validity with the total and subscale scores of the SANS, negative symptoms of the BPRS and self-report measure of BAS. The CAINS-K also exhibited strong divergent validity, as it was minimally related to positive symptoms of the BPRS, depression in the CDSS and verbal fluency test among neurocognitive tasks. **Conclusion:** The CAINS-K demonstrated good reliability and validity and is expected to be used for studies of negative symptoms in Korean schizophrenia patients.
Keywords: CAINS, Negative Symptoms, Schizophrenia, Reliability, Validity

NO. 75

TRANSITIONS IN PROBLEMATIC INTERNET USE: A ONE-YEAR LONGITUDINAL STUDY OF BOYS

Lead Author: Sang Kyu Lee, M.D., Ph.D.
Co-Author(s): Marc N. Potenza

SUMMARY:

Problematic Internet use (PIU) is characterized by excessive preoccupation, poorly controlled use and interference in multiple areas of functioning, including school, work, and familial and other social domains, especially in male adolescents. Prospective studies may help elucidate factors associated with progression and remission, as well as to provide data on incidence of conditions. However, little research of this type has been conducted in PIU. This study prospectively examined PIU in children/adolescents and identified possible risk factors associated with transitions in PIU severity. 650 middle school boys were surveyed at two points in time over one year and were analyzed regarding their natural course of problematic Internet use tendency, correlation with other psychological factors and predicting factors to transit Internet severity levels. At baseline, 90 students (15.3%) were considered problematic users by the Korean Internet Addiction Test (KIAT), and after one year, 14 students (2.4%) continued to be considered problematic, and 59 students (10%) were considered new-onset problematic users. At baseline, the continuous problematic group had a higher level of KIAT scores, attention-deficit/hyperactivity disorder (ADHD) tendencies, anger expression and fewer Internet game-free days per week than other groups. One year later, depression, motor impulsivity and smart phone addiction tendency were more severe in the present problematic groups. The transition to problematic group revealed more bullied or bullying problems in school. The hyperkinetic ADHD score might affect the transit from problematic to low risk, and the cognitive ADHD score—number of Internet game-free days per week—could determine the transition. These results suggest that long-term, ongoing problematic Internet-using adolescents revealed more potential negative consequences compared to others, and comprehensive approaches and some

specific strategy (e.g., limiting Internet use) could be needed to prevent adolescent Internet addiction.

NO. 76

SMARTPHONE ADDICTION IN KOREAN ADOLESCENTS AND RELATED FACTORS: FOCUSING ON SMARTPHONE USE PATTERNS AND PARENT-CHILD RELATIONSHIPS

Lead Author: Hyuk Lee, M.D.
Co-Author(s): Tae Young Choi, M.D., Ph.D., Sung Il Jung, M.D., Sung-Won Jung, M.D., Ph.D., Sungman Chang, M.D., Ph.D., Kwang-Hun Lee, M.D., Ph.D., Jonghun Lee, M.D., Ph.D.

SUMMARY:

Objective: Despite the benefits of smartphones, many adverse effects have emerged. However, clinical evidence of disease entity about smartphone addiction was unclear. The objective of this study was to investigate the effect of smartphone use pattern and parent-child relationship on smartphone addiction in Korean adolescents. **Methods:** A total of 392 middle school students participated in this study. The severity of smartphone addiction was measured using the Korean Smartphone Addiction Proneness Scale. Using self-report questionnaires, the following items were assessed for each subject: smartphone functions most used, purpose of use, smartphone use pattern and parent-child relationship. Data were subjected to Independent t-test and stepwise multiple linear regression analyses. **Results:** Of the 392 students, 53 (13.5%) were in the high-risk group for smartphone addiction. For smartphone functions most used, the high-risk group showed significantly higher scores than the non-high-risk group in social network service (p=0.003) and online chat (p=0.004). For purpose of use, the high-risk group showed significantly higher scores than the non-high-risk group in habitual use (p<0.001), use for pleasure (p=0.008), use for communication (p<0.001), use for stress relief (p<0.001), use for convenience (p<0.001) and use for ubiquitous trait (p=0.002). For smartphone use pattern, the high-risk group showed significantly higher scores than the non-high-risk group in preoccupation (p<0.001), tolerance (p<0.001), lack of control (p<0.001), withdrawal (p<0.001), mood modification (p<0.001), conflict (p<0.001), lies (p<0.001), excessive use (p<0.001) and loss of interest (p=0.002). For parent-child relationship, the high-risk group showed significantly higher scores than the non-high-risk group in punishment (p=0.001). Based on stepwise multiple regression analysis, habitual use (β=0.525, p=0.001), tolerance (β=0.285, p=0.019), withdrawal (β=0.276, p=0.022), conflict (β=0.334, p=0.028), excessive use of smartphone (β=0.506, p<0.001), and parental punishment (β=0.192, p=0.002) were found to be significantly correlated to smartphone addiction (R^2=0.458, p<0.001). **Conclusion:** Our results revealed that habitual use, tolerance, withdrawal, conflict, excessive use of smartphone and parental punishment were significantly correlated to smartphone addiction. Therefore, alternative activities should be developed to prevent habitual use of smartphone instead of parental punishment.

NO. 77

GAMBLING DISORDER AND CONCURRENT ALCOHOL USE DISORDER TREATED WITH NALTREXONE: A CASE REPORT AND REVIEW OF THE LITERATURE

Lead Author: Alexandra Takayesu, M.D., M.P.H.

SUMMARY:

Background: Patients with alcohol use disorders have a higher rate of gambling disorder than patients without alcohol use disorders. While naltrexone is one of the few FDA-approved treatments available for alcohol use disorders, there are no FDA-approved medications for gambling disorder. Naltrexone is an opioid antagonist that has been shown to decrease cravings and heavy drinking of alcohol. While some previous studies show that it may decrease gambling urges, the evidence is limited. **Case:** We describe a 41-year-old male diagnosed with severe alcohol use disorder with alcohol-induced depressive disorder and concurrent gambling use disorder who presented to the emergency room for suicidal ideation while intoxicated with alcohol. The patient reported gambling on sporting events almost daily for the last five years, and he incurred thousands of dollars in debt, which led to financial and relationship difficulties. He also endorsed almost daily alcohol use for the last few years, which has also been increasing in frequency and amount over time. He became suicidal on the day of presentation due to feeling overwhelmed by his financial debt. The patient was admitted to the hospital and started on a Clinical Institute Withdrawal Assessment protocol for alcohol withdrawal symptoms. His suicidal ideation resolved within a day after alcohol intoxication resolved. The patient expressed little interest in attending Alcoholics Anonymous, Gamblers Anonymous or other substance use treatment programs. He was interested in starting a

medication to reduce alcohol use. On the day of discharge, the patient was started on naltrexone 50mg/day by mouth for alcohol use disorder. The patient was seen in the outpatient psychiatric clinic the following week, where he reported continued abstinence from both alcohol and gambling. After two months, he was adhering to naltrexone and had maintained abstinence. **Discussion:** Previous literature shows that naltrexone is a safe and effective treatment for alcohol use disorder and has mixed results for gambling disorder. There has been one randomized, placebo-controlled trial of naltrexone treatment in concurrent alcohol use disorder and pathological gambling, which showed no significant differences between the control and treatment group, although there was a strong time effect, suggesting that treatment was effective. One previous case report described improvement in cravings and avoidance of relapse for up to four weeks with the use of naltrexone in a patient with alcohol dependence and pathological gambling. In patients with concurrent alcohol use and gambling disorders, naltrexone may be considered a useful pharmacological treatment option.

NO. 78

DOES CHANGE IN COGNITION AFFECT FUNCTIONING AFTER COGNITIVE REMEDIATION INTERVENTION FOR PATIENTS WITH SCHIZOPHRENIA?

Lead Author: Jean-Pierre Lindenmayer, M.D.
Co-Author(s): Samantha Fregenti, Veronica Ozog, Isidora Ljuri, Abraham Goldring, Guoxin Kang, Anzalee Khan

SUMMARY:

Background: Deficits in cognition have been well established in patients with schizophrenia. There has been significant research showing a relationship between cognitive function and psychosocial functioning, such as community adjustment, acquisition of social skills and positive vocational outcomes. However, there is limited empirical evidence of the specific links between improvements in cognitive functioning and social performance. The goal of this study was to examine the cognitive effects of changes in cognition after 12 weeks of cognitive remediation therapy (CRT) on changes in overall and specific psychosocial domains. **Methods:** Following screening, patients started either COGPACK or PositScience for 36 sessions (12 weeks). Assessments were completed at baseline and endpoint, including the MCCB MATRICS Consensus Cognitive Battery (MCCB) for neurocognition, the Personal and Social Performance Scale (PSP) for functional outcomes in socially useful activities, personal and social relationships, self-care, disturbing and aggressive behaviors, and overall function. All patients were stable and on antipsychotic medication regimens. A patient was considered improved on psychosocial functions if his or her overall PSP score moved into at least one 10-point range higher than the baseline range. A generalized linear model (GLM) was conducted to assess which MCCB domain contributes to the improvement of overall PSP scores. **Results:** Sixty-three in- and outpatients with *DSM IV-TR* schizophrenia or schizoaffective disorder completed CRT. There was a significant improvement in the overall MCCB T score ($p=0.020$). Two MCCB domains showed significant improvement, the letter-number span test and the domain of working memory ($p=0.006$ and $p=0.001$, respectively). There was a significant improvement in overall PSP score from baseline to endpoint ($p=0.021$). A chi-square test revealed a significant difference from baseline to endpoint in PSP domains of socially useful activities ($p=0.012$), personal and social relationships ($p=0.008$), and disturbing and aggressive behaviors($p=0.012$), but not in self-care ($p=0.222$). After the CRT intervention, significant correlations were found between baseline TMT ($r=0.395$, $p=0.001$), BASC ($r=0.315$, $p=0.012$), verbal fluency ($r=0.457$, $p<0.001$), speed of processing ($r=0.436$, $p<0.001$), verbal learning ($r=0.251$, $p=0.048$), overall MCCB T score ($r=0.289$, $p=0.022$) and endpoint overall PSP scores. GLM analysis showed significant associations between overall PSP score and baseline TMT scores, baseline fluency scores and baseline total PANSS scores ($p=0.037$, 0.025 and 0.041, respectively). **Conclusion:** We found that verbal fluency, speed of processing and verbal learning were significantly associated with improvement in social functioning. These results suggest the importance of training in the cognitive domain of speed of processing and fluency in order to obtain improvements in psychosocial functioning for individuals with schizophrenia.

NO. 79

A FVE-YEAR FOLLOW-UP STUDY OF MILD COGNITIVE IMPAIRMENT INCIDENCE IN TWO URBAN AND RURAL COMMUNITIES IN BEIJING

Lead Author: Zhaorui Liu, M.D., Ph.D., M.P.H.
Co-Author(s): Yueqin Huang

SUMMARY:

Objective: Describe the incidence of mild cognitive impairment (MCI) in one urban and one rural community of Beijing over five years and to explore sociodemographic and biological risk factors of MCI incidence. **Methods:** In total, 1,859 elderly people aged 65 and over in Beijing's Xicheng District (urban) and Daxing District (rural) were evaluated by a set of fully structured assessments in a one-stage process developed by the international cooperative 10/66 group (including the Geriatric Mental State Schedule Shortened Community Version and Automated Geriatric Examination for Computer-Assisted Taxonomy (GMS-AGECAT), Cognitive test battery, Informant Interview Questionnaire, and Background Sociodemographic and Risk factor Questionnaire). MCI was diagnosed according to the general MCI developed by the 10/66 group. The five-year cumulative incidence rate and average annual incidence rate were calculated to describe the status of incidence of MCI; uni- and multivariate Cox regressions were applied for analyzing risk factors. **Results:** In this follow-up study, 193 subjects were diagnosed as new MCI patients. The five-year cumulative incidence rate was 10.38%(95% CI: 9.00~11.82%), and the average annual incidence rate was 2.17% (95% CI: 1.76~2.30). There were statistical differences in MCI incidence by age, gender, urban/rural area and education level. Older age (HR=4.66, 95% CI: 1.41~15.42), living in a rural area (HR=2.54, 95% CI: 1.72~3.75), history of stroke (HR=3.04, 95% CI: 1.63~5.68), history of diabetes (HR=2.00, 95% CI: 1.14~3.50) and larger waist-hip ratio (HR=4.97, 95% CI: 3.53~7.01) were risk factors of MCI occurrence. Having a spouse (HR=0.55, 95% CI: 0.40~0.76) and physical exercise (HR=0.34, 95% CI: 0.14~0.84) were protective factors. **Conclusion:** The five-year cumulative incidence rate of MCI found from this study in elderly people aged 65 and over in Beijing was 10.38%, and the average annual incidence rate was 2.17%. Older age, living in a rural area, history of stroke, history of diabetes and larger waist-hip ratio were risk factors for MCI occurrence. This study provides a foundation for future prevention and intervention of MCI, which has significant social and clinical value.

NO. 80

ASSOCIATION OF SFLT-1 WITH PROGRESSIVE CORTICAL THICKNESS REDUCTION: A PRELIMINARY LONGITUDINAL STUDY OF FAMILIAL HIGH RISK FOR PSYCHOSIS

Lead Author: Paulo L. Lizano, M.D., Ph.D.

Co-Author(s): Jeffrey K. Yao, Ph.D., Tandon Neeraj, B.A., Matcheri S. Keshavan, M.D.

SUMMARY:

Background: Research supports the role of peripheral angiogenic factors in schizophrenia. Angiogenic factors (e.g. VEGF, sFlt-1) can regulate microvascular change, blood flow and energy metabolism. Some angiogenesis markers have been associated with brain structure in schizophrenia. We recently demonstrated that sFlt-1 is significantly elevated in subjects at familial high risk for psychosis (FHR). It is unclear whether angiogenic disruption in antipsychotic-naïve FHR subjects has an effect on clinical and microstructural brain imaging measures, and we hypothesize that elevated sFlt-1 correlates with baseline and longitudinal changes in medial temporal lobe structures (MTL), symptomatology and cognition. **Methods:** Baseline serum levels of sFlt-1 from individuals with FHR (age=17±0.6, n=35) and healthy controls (HC, age=25±1, n=39) was measured using a Meso Scale Discovery's multi-array technology kit. In FHR subjects, schizotypal symptoms were rated using the Chapman Psychosis Proneness Scale. In the two groups, baseline cognitive (WCST perseverative error score), soft neurologic signs (NES total score) and structural brain imaging (1.5T T1-weighted MRI) was obtained. For a subgroup of FHR subjects, three years of longitudinal data was available. Baseline data was analyzed using Pearson's correlations between sFlt-1 and clinical/imaging measures, followed by Benjamini and Hochberg correction. Longitudinal data was analyzed using linear mixed model ANOVA (sFlt-1 was median split in the FHR group) to determine the effects of baseline sFlt-1 level on symptomatology, cognition, soft neurologic signs and MTL structure. **Results:** As previously demonstrated, sFlt-1 was significantly increased (1.7 fold, ES=0.8) in FHR subjects when compared to healthy controls. At baseline, sFlt-1 was significantly correlated with soft neurologic signs (r=0.27, p=0.02, q=0.09), but not symptomatology, cognition or MTL structure. Longitudinal examination in the FHR group demonstrated that high levels of sFlt-1 were significantly associated with worsening schizotypal symptoms (t=1.9, p=0.01) and reduced left parahippocampal cortical thickness (t=−2.3, p=0.05) when compared to low levels of sFlt-1 expression. No differences were noted for cognition, soft neurologic signs and other MTL structures. **Discussion:** These findings suggest an association between higher levels of sFlt-1 and structural

abnormalities in the parahippocampus of people at familial high risk for psychosis, as well as a worsening of schizotypal symptoms. The increased levels of sFlt-1 are consistent with the hypothesis of altered microvascular circulation in schizophrenia and those at risk.

NO. 81

A REVIEW OF THE LITERATURE ON LONG-ACTING INJECTABLE ANTIPSYCHOTICS IN CHILDREN, ADOLESCENTS AND TRANSITIONAL-AGE YOUTH

Lead Author: Sarah M. Lytle, M.D.
Co-Author(s): Molly McVoy, M.D.

SUMMARY:

Psychotic disorders, including schizophrenia, schizoaffective disorder and bipolar disorder, are lifelong illnesses that often present during adolescence and the transitional-age years. During this time period, multiple developmental processes occur, including frontal lobe development (impacting executive functioning), increased independence, development of intimate relationships and identity formation. Some studies have suggested that individuals with earlier onset psychotic disorders may have poor long-term outcomes as compared to those with adult-onset psychotic disorders. Early intervention and treatment, including the use of antipsychotic medication, is critical. Since medication nonadherence may contribute to relapse and recurrence, the use of long-acting injectable antipsychotics (LAI) is sometimes implemented. However, no LAIs are currently approved for use in children and adolescents, despite the fact that this is an opportunity to make the most robust and positive difference in long-term outcomes and health trajectories. While a number of articles have reviewed the use of LAIsin first-episode psychosis, none, to the best of our knowledge, have focused on LAIs in children and adolescents. Therefore, we undertook a review of the available literature to determine the current state of knowledge for the use of LAIs in children and adolescents. Since our initial review demonstrated a paucity of reports in children and adolescents, we expanded our search to include a mean age younger than 25 (transitional-age youth), as this allowed us to report on studies that included adolescents in their research group. Our search revealed four case reports/series and three open label trials that addressed the use of LAIs in children, adolescents and transitional-age youth. No randomized, placebo-controlled trials were found. The studies found suggest that the medications are tolerated by youth in their long-acting form in a similar way to oral preparations. They also begin to indicate that the use of LAIs in youth may increase adherence and decrease the risk of relapse. However, due to their open-label nature, their findings must be interpreted cautiously. Finally, clinical experience suggests that LAIs are being used in children, adolescents and transitional-age youth. Based on this literature review, it is clear that there are very few studies that have examined the use of this class of medications in children and adolescents. Due to the importance of appropriate and rapid intervention for individuals with psychotic disorders, more studies on LAI use in children, adolescents and transitional-age youth are needed.

NO. 82

PSYCHOTROPIC DRUG CHANGES CONTRIBUTING TO READMISSIONS IN MEDICALLY HOSPITALIZED PSYCHIATRIC PATIENTS: A RETROSPECTIVE STUDY

Lead Author: Subramoniam Madhusoodanan, M.D.
Co-Author(s): Biling Xu, M.D., Srikanth Prayaga, M.D., Piotr Slowik, M.D., Ronald Brenner, M.D., Thomas Wallace, M.D., Natalie S. Schwartz, M.D., M.M.I.

SUMMARY:

Background: Psychotropic drug changes during medical hospitalizations may lead to psychiatric and medical readmissions. **Methods:** One-year hospitalization records of patients with chronic mental illness and a psychotropic drug change during medical admission from three area nursing homes were reviewed. We calculated the readmission rates for 30, 60 and 90 days; the classes of the psychotropic drugs changed; and the specialties of the responsible physicians. Readmission rates were compared with those of an age-matched control group. **Results:** The changes were associated with an increase in psychiatric readmission rate of 2.7% (30 days), 5.4% (60 days) and 14.9% (90 days). The 90-day readmission rate reached statistical significance (14.9% vs. 2.7%, OR: 6.29, p=0.020). The family practice team was responsible for a higher psychiatric readmission rate (18.4%). **Conclusion:** Judicious changes, attempts at retitration and appropriate documentation of reasons for change on discharge records may reduce readmission rates.

NO. 83

ASSOCIATED FACTORS ON CAREGIVER BURDEN AND QUALITY OF LIFE IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Se-Ri Maeng, M.D.

SUMMARY:

Objective: This study specifically identified patient and primary caregiver factors that may affect family burden of primary caregivers, targeting patients with schizophrenia and their primary caregivers, and furthermore investigated the influence of primary caregivers' quality of life (QoL). **Methods:** Among patients with schizophrenia who were undergoing outpatient treatment at the psychiatric department of a university hospital, 74 patients without evidence of exacerbation of symptoms within the last month and their 74 primary caregivers were investigated. From patients and primary caregivers, sociodemographic data were collected. Additionally, for patients, as clinical scales, patients' symptoms, drug attitude, internalized stigma and insight into disease were assessed, and for primary caregivers, family burden and quality of life were assessed. **Results:** The subjective drug attitude of patients with schizophrenia appeared to be generally positive. The internalized stigma was 39.99±10.22 points, and the insight into disease was 17.68±4.99 points. The total family burden of primary caregivers was 41.88±25.78 points, and the total mean QoL score was 2.98±0.58 points. As a result of multiple regression analysis on primary caregivers' family burden using stepwise selection, the primary caregiver's monthly income, the primary caregiver's gender, delusional symptoms among the patient's clinical symptoms and the patient's subjective negative drug attitude significantly explained the total family burden of primary caregivers. In multiple regression analysis on QoL, the primary caregiver's monthly income, the primary caregiver's education level, the patient's treatment duration, the degree of disorganized speech among the patient's clinical symptoms and the patient's gender significantly explained the total mean QoL score. In the dimensions of quality of life, physical health was correlated with the primary caregiver's monthly income, the patient's treatment duration and the degree of disorganized speech among the patient's clinical symptoms. The psychological dimension of QoL was correlated only with the primary caregiver's monthly income. The social dimension of QoL was associated with the patient's treatment duration, negative drug attitude, and the degree of disorganized speech among the patient's clinical symptoms. **Conclusion:** Even primary caregivers of schizophrenia patients with stabilized symptoms were burdened by their patients' delusions and subjective negative drug attitude. Additionally, in various factors determining primary caregivers' level of QoL, a clinical symptom such as the patient's disorganized speech and clinically correctable factors such as negative drug attitude and insight into disease on positive symptoms were included. Therefore, provision of education regarding drug and disease for patients and primary caregivers will be helpful to effectively reduce family burden and improve the QoL of primary caregivers.

NO. 84

CLINICAL RESPONSE AND SYMPTOMATIC REMISSION WITH APTENSIO XR® (METHYLPHENIDATE EXTENDED-RELEASE CAPSULES) IN CHILDREN AND ADOLESCENTS WITH ADHD

Lead Author: Greg Mattingly, M.D.

Co-Author(s): Ann Childress, M.D., Earl Nordbrock, Ph.D., Akwete L. Adjei, Ph.D., Robert J. Kupper, Ph.D., Margaret Weiss, M.D., Ph.D.

SUMMARY:

Background: The Aptensio XR® (methylphenidate multilayer extended-release, MPH-MLR) pivotal trial provided evidence of efficacy in children and adolescents with attention-deficit/hyperactivity disorder (ADHD); mean change in ADHD-Rating Scale, Fourth Edition, scores (ADHD-RS-IV) showed significant improvement compared to placebo. Clinical response and symptom remission might be more useful measures of treatment response for clinicians. **Methods:** This phase III study was a forced-dose parallel evaluation of MPH-MLR safety/efficacy including four phases: screening (≤28 days), one-week double-blind (placebo or MPH-MLR 10, 15, 20 or 40mg/day), 11-week open-label dose optimization (11 weeks), and a 21-month compassionate use extension. ADHD-RS-IV scores were obtained at screening and study days 0, 7, 14, 21, 28, 56 and 84 and at various points throughout the 21-month extension. In this post hoc analysis of data from that trial, response was defined as a reduction from baseline in ADHD-RS-IV score of 30% or more, and symptomatic remission was defined as an ADHD-RS-IV score of 18 or lower and/or a Clinician Global Impression-Severity (CGI-S) of 2 or lower (minimally ill or normal). **Results:** A total of 221 patients completed the double-blind phase (MPH-MLR [n=175], placebo [n=46]), and 200 patients completed the 11-week open-label optimization phase. At the end of the 11-week open-label optimization, 94% (188/200) of patients on

MPH-MLR responded to treatment, and symptomatic remission was achieved in 75% (150/200) with an ADHD-RS-IV score of 18 or lower, and 92% (183/200) achieved remission as defined as a CGI-S score of 2 or lower (minimally or not ill). Throughout the 21-month extension, overall response and remission rates were well preserved and maintained by the majority of patients. **Conclusion:** Long-term optimized treatment with MPH-MLR achieved high rates of clinical response (94%) and symptomatic remission (75 to 92%) with very low dropout rates due to adverse events. Symptomatic remission was dose related in the initial one-week fixed-dose portion of the trial. The clinical implications of dose-related symptomatic remission and the import of dose optimization for optimal symptomatic improvement should be explored in future clinical trials.

NO. 85

PSYCHIATRIC AND NONPSYCHIATRIC CONSULTATIONS FOR SUBSTANCE-RELATED EMERGENCY DEPARTMENT VISITS IN A CANADIAN UNIVERSITY-AFFILIATED HOSPITAL SETTING

Lead Author: Mir N. Mazhar, M.D.
Co-Author(s): Felix Lau, Christine Van Winssen, Neeraj Bajaj, Tariq Hassan, Tariq Munshi, Dianne Groll

SUMMARY:
Objective: Determine if certain factors among substance-related emergency department visits are related to the likelihood of receiving psychiatric and nonpsychiatric consultations. **Methods:** We investigated if certain factors including age, sex, mode of arrival and substance used are related to consultation. Data were gathered retrospectively from a university-affiliated hospital database. **Results:** Our results indicated that factors associated with more nonpsychiatric consults than expected included adult and geriatric age, ground ambulance arrival, and opiate use. Factors represented less than expected included female sex and stimulant and cannabis use. For psychiatric consults, adult age; police, walk-in or other modes of arrival; and multidrug and psychoactive substance, cannabis, and stimulant use were represented more than expected, while arrival by ground ambulance and alcohol and opiate use were represented less than expected. **Conclusion:** We concluded that emergency physicians should receive more training in handling substance-related cases and recommended that a comprehensive tool be developed to improve transparency and consistency in decisions regarding consultation patterns. We further suggested that more research be dedicated to understanding consultation patterns and subsequent outcomes in patients presenting to the emergency department with substance-related diagnoses.

NO. 86

ATOMOXETINE TREATMENT AND SLUGGISH COGNITIVE TEMPO IN CHILDREN WITH ADHD AND COMORBID DYSLEXIA OR DYSLEXIA IN A RANDOMIZED, PLACEBO-CONTROLLED TRIAL

Lead Author: Keith McBurnett, Ph.D.
Co-Author(s): David Clemow, David Williams, Linda Wietecha, Russell Barkley

SUMMARY:
Objective: Evaluate treatment with atomoxetine versus placebo on sluggish cognitive tempo (SCT) and factors contributing to improvement of SCT in children with attention-deficit/hyperactivity disorder (ADHD) only, ADHD with comorbid dyslexia (ADHD+D) or dyslexia only. **Methods:** This was a post-hoc analysis of a placebo-controlled, double-blind, randomized 32-week study in children aged 10–16 years with ADHD only (n=27), ADHD+D (n=124) and dyslexia only (n=58). During the 16-week double-blind phase, patients with ADHD+D or dyslexia only were randomized 1:1 to atomoxetine (1.0–1.4mg/kg/day) or placebo, while the ADHD only group received atomoxetine in a blinded fashion (no placebo). Least squares (LS) mean changes from baseline to endpoint for atomoxetine versus placebo on the Kiddie-Sluggish Cognitive Tempo Interview (K-SCT) (parent, teacher and youth versions) were analyzed using analysis of covariance and multiple regression (partial R-squared [R2]) analyses to test contributions of ADHD, dyslexia and other factors on improvements of K-SCT scores in the atomoxetine groups. **Results:** Improvements in the atomoxetine groups of SCT symptoms measured by K-SCT were shown, a priori, to be partly driven by improvements in ADHD symptoms (Pearson's correlation; r=~0.5). In the post hoc ANCOVA model, when controlling for the baseline to endpoint change on the ADHD Rating Scale-IV Parent Version: Investigator Administered (ADHD-RS) total score as a covariate, the atomoxetine versus placebo baseline to endpoint changes in K-SCT scores comparisons were not statistically significant for the ADHD+D or dyslexia groups. However, there is a known relationship and possible shared causation between SCT and ADHD in

that covarying one factor to examine the effects of atomoxetine on the other could remove legitimate variation in the trait (SCT) that overlaps with the covariate (ADHD). Regression analyses can delineate the relative contribution of ADHD symptom change on SCT change. The regression analysis for the ADHD+D versus ADHD groups, for example, showed that the baseline K-SCT Parent Version score (partial R2=0.48) was the largest contributor to atomoxetine-associated change in K-SCT score. The change in ADHD-RS inattentive score (partial R2=0.17) had a minor contribution, and change in ADHD-RS total score (partial R2=0.0061) and Woodcock Johnson III Word Attack score (representing dyslexia) (partial R2=0.0004) had no contribution. **Conclusion:** The improvement in K-SCT scores in the atomoxetine groups was largely a function of baseline SCT severity. Based upon regression analysis, there was little contribution of ADHD to atomoxetine-induced changes in SCT. These results support the uniqueness of SCT features relative to ADHD symptoms.

NO. 87

REDUCING BURNOUT IN MILITARY HEALTH CARE PROFESSIONALS THROUGH MIND BODY MEDICINE

Lead Author: Jeffrey Millegan, M.D., M.P.H.
Co-Author(s): Vasudha Ram, M.P.H., Jagruti Bhakta, Ph.D., Alexander Brown, M.S., Genelle Weits, Ph.D., Lisa Hess, L.C.S.W.

SUMMARY:
Occupational burnout is a pressing issue among military mental health care providers. Previous research has suggested that the effects of burnout include a decline in job performance, compassion fatigue, diminished emotional and mental well-being, greater risk for medical errors, and increased job turnover. These effects are likely to be compounded for clinicians working with combat-related traumas, placing them at increased risk for experiencing vicarious traumatization, secondary traumatic stress, compassion fatigue and professional burnout. There is limited research available on effective interventions targeted to reduce stress and burnout in military health care professionals. In this poster, we discuss the implementation and integration of the Mind-Body Medicine (MBM) program for staff at the Naval Medical Center in San Diego (NMCSD), describe ongoing program evaluation efforts and present preliminary results from the program. The MBM program was designed to provide an opportunity for military health care providers to increase their awareness of burnout and its consequences and to learn how to utilize mindfulness-based self-care practices as a means for preventing burnout and reducing stress at work. The objectives of the MBM program include teaching staff how to better manage stress, improve health and functioning, develop resiliency self-care skills, and actively put these skills into practice. 31 staff members participated in a six-week MBM program. Staff members attended a two-hour MBM group each week. Topics covered in sessions included meditation techniques, cognitive restructuring, yoga, qi gong, sleep hygiene and developing social connections. Pre- and post-assessments were administered prior to and upon completion of the program. Staff members showed significant improvements in anxiety (GAD-7), depression (PHQ-9), coping skills (RSES) and overall quality of life (WHO-QOL Physical, Psychological, Social and Environmental) upon completion of the program ($p<0.05$). Further, the participants rated the program to be excellent and plan to continue to use the cognitive restructuring and meditation techniques they learned from the program. Program evaluation is ongoing, and three-month follow up assessments are currently being administered to staff participants in order to build on these findings and assess the long-term efficacy of the program.

NO. 88

ADVANCES IN PSYCHODYNAMIC PSYCHIATRY: SEPARATION ANXIETY

Poster Presenter:Elizabeth L. Auchincloss, M.D.
Lead Author: Barbara Milrod, M.D.

SUMMARY:
This poster will be an overview of separation anxiety and attachment, focusing on effects on outcomes and their central importance in dynamic treatment and understanding of anxiety disorders. Separation anxiety is a normative developmental achievement that preserves the species, yet when it persists past early childhood, it can have a profound effect on the development of anxiety disorders in later childhood and adulthood. Separation anxiety imparts an increased burden of risk in terms of persistent anxiety and poor response to treatment.

NO. 89

MULTIMORBIDITY, GENDER AND SCHIZOPHRENIA: A QUEBEC CROSS-SECTIONAL STUDY

Lead Author: Javad Moamai, M.D., M.Sc.

SUMMARY:
Objective: Multimorbidity (MM) is highly prevalent in schizophrenia-related disorders (SRD), yet questions remain about the impact of gender on the patterns and rates of MM. Thus, this study further examined these correlations among inpatients suffering from SRD. For this study, comorbid illnesses were defined as those currently requiring treatment or continuing medical surveillance. **Methods:** This cross-sectional study was conducted using secondary data taken from discharge records (ICD-10 format) of 1,152 adults (ages 18–64) admitted for SRD to a Quebec-based facility between 2006 and 2014. Nonparametric descriptive statistics were used for analysis. **Results:** The prevalence rate of MM was 84%. The median number of comorbid illnesses was three for each study subject. Psychiatric comorbidity (PC) was more common in males (65 vs. 52%), whereas medical comorbidity (MC) was observed more in females (73 vs. 63%). The female subjects were sicker, with a higher Charlson comorbidity index score (2 vs. 1). Interestingly, the MM rate was not correlated with age. Metabolic syndrome (28%), cardiovascular diseases (17%) and chronic lung diseases (14%) were the most prevalent MCs, whereas substance misuse (65%), personality disorders (18%) and alcohol misuse (12%) were the most frequent PCs. **Conclusion:** The distinction of this study was the observation that MM is the norm in both genders, even in younger subjects suffering from SRD. These findings advocate strongly for integrated management of psychiatric and physical health problems in clinical practice.

NO. 90

ASSOCIATION OF CARDIOVASCULAR RISK FACTORS WITH COGNITIVE IMPAIRMENT IN INDIVIDUALS WITH SCHIZOPHRENIA: A SYSTEMATIC REVIEW

Poster Presenter:Marie-Louise Tangu
Lead Author: Satyajit Mohite, M.D., M.P.H.
Co-Author(s): Ajay Parsaik, Olusegun Popoola, Olaoluwa Okusaga

SUMMARY:
Background: Cardiovascular risk factors are highly prevalent in patients with schizophrenia and may negatively affect their cognition. We therefore performed a systematic review of the evidence for association of cardiovascular risk factors with cognition in patients with schizophrenia. **Methods:** We searched major electronic databases through May, 2014 for studies (cross-sectional, case-control, cohort and controlled trials) reporting the association of any cardiovascular risk factor with cognition in schizophrenia. Studies using animal models were excluded. Resulting abstracts were screened independently by two reviewers followed by a full-text review of selected articles to determine eligibility for inclusion in this review. **Results:** Metabolic syndrome and diabetes mellitus were associated with poorer cognitive function in four studies each. Cigarette smoking was 1) Unrelated to cognition in two studies; 2) Associated with better cognition in three studies; and 3) Associated with poorer cognition in one study. Overnight smoking abstinence and smoking abstinence for up to 10 weeks were associated with impaired cognitive function in two studies each, while one study found no change in cognition after smoking abstinence for one week. Obesity was not associated with cognition in three studies. One study reported a positive association between cholesterol levels and cognition. **Conclusion:** There is considerable evidence for the association of metabolic syndrome and diabetes mellitus with poorer cognitive function in patients with schizophrenia. The evidence for other cardiovascular risk factors is inconclusive.

NO. 91

IMPAIRED INTERACTIONS BETWEEN CIRCADIAN ACTIVITY OF THE HPA AND HPT AXES IN DEPRESSION

Lead Author: Marie-Claude Mokrani, Ph.D.
Co-Author(s): Fabrice Duval, Alexis Erb, Felix Gonzalez Lopera, Xenia Proudnikova, Veronique Paris

SUMMARY:
Background: Major depression has been associated with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, as well as the hypothalamic-pituitary-thyroid (HPT) axis. Evidence suggests that glucocorticoids inhibit thyrotropin (TSH) secretion. However, in depression, their effects on the HPT axis are controversial. **Methods:** To further investigate this issue, we determined circadian rhythms of serum cortisol and TSH in 145 drug-free *DSM-IV* inpatients with major depression and 25 healthy hospitalized controls. Moreover, we evaluated cortisol response to dexamethasone suppression test (DST) and TSH response to 8AM and 11PM TRH tests in the same population. **Results:** Both circadian secretion of cortisol and TSH showed a significant rhythm in controls and patients. Compared to controls, patients showed 1) Higher cortisol mesor

and post-DST cortisol values ($p<0.01$ and $p<0.05$, respectively); 2) Lower TSH mesor and amplitude values ($p<0.0005$ and $p<0.01$, respectively); and 3) Lower 11PM-ΔTSH and ΔΔTSH values (differences between 11PM-ΔTSH and 8AM-ΔTSH) (both $p<0.0001$). According to their DST responses, patients were classified into suppressors (n=105; 73%) and nonsuppressors (n=40; 27%). Both DST suppressors and nonsuppressors exhibited higher cortisol mesor than controls ($p<0.001$ and $p<0.01$, respectively), while DST nonsuppressors showed higher cortisol mesor than DST suppressors ($p<0.001$). However, TSH-TRH responses and TSH circadian parameters did not differ between DST suppressors and nonsuppressors. Conversely, cortisol values (circadian and post-DST) were not related to TRH test responses. Conclusion: Our data show the lack of inhibitory effect of hypercortisolemia on HPT axis activity, suggesting that interrelations between the HPA and HPT axes are possibly affected during depressive states.

NO. 92

RESOURCE USE AND COST IN A RANDOMIZED, NON-INFERIORITY TRIAL OF PALIPERIDONE PALMITATE THREE- VERSUS ONE-MONTH FORMULATIONS IN PATIENTS WITH SCHIZOPHRENIA

Poster Presenter:Carmela Benson, M.S.
Lead Author: Erik Muser, Pharm.D., M.P.H.
Co-Author(s): Costel Chirila, Ph.D., Jonathan Graham, M.S., Kimberly Woodruff, Ph.D., Pharm.D.

SUMMARY:

Background: A randomized, multicenter, double-blind, parallel-group, non-inferiority trial comparing paliperidone palmitate 3-month (PP3M) and paliperidone palmitate 1-month (PP1M) formulations was conducted in adults with schizophrenia. A once-monthly flexible dose injection of PP1M in the open-label (OL) 17-week stabilization phase was followed by randomization to either switch to PP3M or continue with PP1M at a fixed dose during the 48-week double-blind (DB) phase. **Objective:** To evaluate health care resource utilization (HRU) and costs for patients randomized to PP3M versus PP1M. **Methods:** HRU data were collected at the start of open-label stabilization (OL baseline), at the end of the open-label phase (DB baseline), every 12 weeks during the 48-week DB phase, at end-of-study and at follow-up assessments. Data collected were hospitalizations, emergency room (ER) visits, day or night clinic stays, and outpatient treatment. Incidence rates per person-year (PPY) at OL baseline and during OL and DB phases were calculated for each resource. A within-trial cost analysis was performed for each HRU category by applying Medicaid-based costs and using Lin's weighted method, which accounts for censoring during the DB phase. Bootstrapping was used to compute 95% confidence intervals (CI) for mean cost differences. All analyses were performed using the modified intent-to-treat double-blind population. No adjustment was made for multiplicity. **Results:** Of the 995 subjects in the modified intent-to-treat population (69.6% of the subjects who entered OL phase), 512 (51.5%) were randomized to PP1M and 483 (48.5%) to PP3M during the DB phase. During the DB phase, HRU incidence rates PPY appeared similar between treatment groups, with less than one event PPY for most categories. Hospitalization and ER visit costs represented the majority of the total and mental health-related HRU costs. The adjusted mean difference in total mental health-related cost was not significantly different between treatment groups: mean cost difference was -$112.5 (95% CI, -$869.6–$638.3) for PP1M relative to PP3M. **Conclusion:** During the DB phase, PPY incidence rates of HRUs were similar between stabilized subjects randomized to PP3M or PP1M. The adjusted mean cost difference overall and by type of HRU during the DB phase was not significantly different between the treatment groups.

NO. 93

LONG-TERM TREATMENT OF PANIC DISORDER WITH CLONAZEPAM OR PAROXETINE DOES NOT PREVENT RELAPSE AFTER DRUG WITHDRAWAL

Lead Author: Antonio E. Nardi, M.D., Ph.D.
Co-Author(s): R. C. Freire, S. Machado, A. Cardoso, M. Mochcovitch, R. Garcia, R. Amrein

SUMMARY:

Objective: Describe the clinical and therapeutic features of 120 panic disorder (PD) patients treated for three years with clonazepam, paroxetine or clonazepam and paroxetine and their follow-up for six years after treatment. **Methods:** A prospective open study randomized 120 PD patients to clonazepam 2mg/day or paroxetine 40mg/day. Poor responders were switched after eight weeks to combined treatment with clonazepam ~2mg/day and paroxetine ~40mg/day. The treatment underwent tapered withdrawal after three years. Efficacy, safety, and cumulative relapse and

remission were studied over the following six years using panic attack (PA) count per month, Clinical Global Impression-Severity (CGI S) score and Hamilton Anxiety Scale (HAMA) score. Assessments were done every three months or at least once a year. **Results:** Ninety-four patients completed three years of treatment. All were free of panic attacks for at least one year before undergoing tapered drug withdrawal. After two months of tapering, 80% of clonazepam patients were drug-free, versus 55% on paroxetine; after six months, these figures had increased to 89% and 64%, respectively, versus only 44% for those on combination therapy. No serious or severe after effect or withdrawal symptoms were observed, but PA/month, CGI S and HAMA worsened slightly, and the rate of adverse events increased slightly during the withdrawal period compared to the treatment period, being still much lower compared to pretreatment conditions. Assessments were annual in 66 patients and performed at five or six years in the remaining 28 patients. In annually studied patients, the relapse rates were similar after the three treatments with a marginal advantage of clonazepam over the combination (p=0.0035) and paroxetine (p=0.08, exact Fisher) at the first year after drug withdrawal. Cumulative relapse rates were 41%, 77% and 94% at years one, four and six, but relapse therapy with either clonazepam or paroxetine was successful in nearly all cases. Ninety percent of the annual follow-up patients were average in remission during the six years of follow-up (partial: 54%, full: 36%); 73% were PA free, 91% had a GCI-S score of 1 and 39% had a HAMA score of 5–10; and 33% needed drug treatment in each follow-up year (11% clonazepam 1 or 2mg/day, 21% paroxetine 20, 30 or 40mg/day). Both treatments displayed similarly high efficacy, but clonazepam was better tolerated. Results in patients studied at the end of follow-up were similar, but somewhat less favorable: 88% were in remission, 72% were PA-free, 62% had a CGI-S score of 1 and 30% had a HAMA score of 5–10, with 39% needing PD treatment. **Conclusion:** PD is a chronic disorder, with many patients relapsing despite being asymptomatic at least one year after three years treatment. However, response to retreatment was excellent at any time during the six-year follow-up. Paroxetine and clonazepam were associated with similar long-term prognoses, but clonazepam was better tolerated.

NO. 94
WITHDRAWN

NO. 95
IMPACT OF EARLY PSYCHIATRIC CONSULTATION ON LENGTH OF HOSPITAL STAY
Lead Author: Ivan Nikiforov, M.D.
Co-Author(s): Ahmad Hameed, Pramil Cheriyath

SUMMARY:
Background: While there is a significant shortage of psychiatrists in the United States, mental illness is widespread. Many areas may not have enough psychiatrists to appropriately address mental health needs. Considering this, it is important to understand the utilization of available psychiatric resources. This study looks at the impact of psychiatric consultation in an inpatient setting. **Methods:** This cohort study included 398 patients; 198 patients were in the study group and 200 patients were in the control group. Patients for both groups were selected from medical floors in an urban hospital. Any patient 18 years or older was eligible to participate. The study group consisted of any inpatient hospital admission with a psychiatric consultation. The control group consisted of any inpatient hospital admission without a psychiatric consult. Parameters that were examined included race, age, gender, living situation, illicit drug use, admissions to psychiatric facilities, admission for drug rehabilitation, time to psychiatric consultation, time from consultation to being seen by psychiatrist and length of stay. The information was collected via survey with patient permission, with additional information being extracted from the patient's medial chart. **Results:** Patients who had a psychiatric consult placed had a significantly higher length of stay (LOS) (OR= 3.846, 95% CI [2.120, 6.977], p<0.0001). Importantly, early psychiatric consultation (day zero or day one) led to a substantially shorter LOS (6.90 days vs 13.11 days, p<0.0001). Additionally, univariate analysis showed that patients who had a psychiatric consult had an LOS above the national average of 4.5 days. This confirmed that patients who require psychiatric consultation have an increased LOS (OR=2.976, CI [1.976, 4.481]. Multivariate analysis showed similar results (OR=3.846, CI [2.120, 6.977], p<0.0001), with delirium and anemia being factors that increased LOS. **Conclusion:** This study shows a clear correlation between early psychiatric consultation and reduced length of hospital stay. It also added to the existing literature that showed that patients who require psychiatric consultation have longer lengths of stay than those that do not require the use of psychiatric services. Unfortunately, causation between early

psychiatric consultation and length of hospital stay could not be established. Further studies should evaluate the potential reasons early psychiatric consultation leads and decreased length of hospital stay.

NO. 96

A PSYCHOSOCIAL ASSISTANCE PROGRAM FOR TRAUMA SURVIVORS AND VIOLENCE VICTIMS IN COLOMBIA: EVALUATION AND LESSONS LEARNED

Lead Author: Jorge Ospina Duque, M.D.
Co-Author(s): Juliana Vélez, M.D., Juan Escobar, M.D., Mauricio Barrera, Ph.D., Alexandra Ramírez, M.Sc., Liliana Calderón, Ph.D., Patricia Ceballos, Ph.D.

SUMMARY:

Objective: Evaluate the impact of implementing "a model of psychosocial intervention for Attention to Victims of Armed Conflict" in five municipalities in Antioquia, Colombia. **Methods:** This is a quasi-experimental study of "before and after" conducted between September 2010 and May 2011 with 118 victims of violence. The model was implemented within a comprehensive framework and community and developed by an interdisciplinary team with three basic dimensions: psychiatry, psychology and family therapy. For initial and final evaluations of the intervention, the following diagnostic and evaluation scales were applied: The International Neuropsychiatric Interview, the Hamilton Rating Scales for Anxiety and Depression (HRSD/HRSA), the Eight-Item Scale for Post-Traumatic Stress Disorder (PTSD-8), the Family APGAR Assessment and the Global Assessment of Functioning. Change was measured in each of the scales at the end of the intervention, which lasted for six months. **Results:** Of the individuals who received the intervention, initial assessment showed that 22.3% had PTSD, 18.7% major depressive disorder, 10.1% generalized anxiety disorder, 8.1% dysthymia, 4% adjustment disorder, and 6.8 % other psychiatric disorders. There was clinical improvement of the subjects at the end of the intervention, as evidenced by significant changes in the scales. We found an effect size for the HRSD of 0.89 (95% CI [4.17, 7.06]), for the HRSA of 0.88 (95% CI [5.97, 9.61]), for the PTSD-8 of 0.72 (95% CI [2.84, 4.93]) and for the Scale for Assessment of Overall Activity of 1.12 (95% CI [-15.07, -11], 37). In evaluating the final scale of the family APGAR, mild family dysfunction increased from 36.2% to 44.2% and the percentage of families who had no family dysfunction remained stable from 13.2% to 13.8%; therefore, the percentage of families with moderate and severe family dysfunction decreased. **Conclusion:** The model showed benefit in both clinical recovery and family, as other psychosocial variables, which contributes to the deleterious impact that armed conflicts cause in our populations, one of the major public health and social problems.

NO. 97

WHO EATS MORE CAKE? A COMPARISON OF FOOD ADDICTION PREVALENCE IN THE GENERAL POPULATION AND A POPULATION WITH SEVERE MENTAL ILLNESS

Lead Author: Nagesh Pai, M.D.
Co-Author(s): Ivana Goluza, Shae-Leigh Vella, Beatrice Dowsett

SUMMARY:

In the last decade, interest in the phenomenon of food addiction has proliferated in both popular media and the academic literature. Food addiction is viewed as an addiction akin to drug addiction, where the implicated substance, instead of being a drug of abuse, is hyperpalatable foodstuffs or "junk food." Although food addiction has yet to be ordained with inclusion in the DSM, the syndrome is defined and operationalized by the *DSM-IV* criteria for substance abuse. The Yale Food Addiction Scale (YFAS) is a self-report instrument based upon the *DSM-IV* criteria for substance abuse that measures problems individuals may have with the consumption of certain foods. As the phenomenon of food addiction is still in its infancy, little is known about the prevalence of the disorder. Therefore, this poster centers upon the results of two recent studies by the authors assessing the prevalence of food addiction both in the general population and in a population of individuals with severe mental illness. Both studies were conducted in Australia, were cross-sectional and utilized the YFAS to measure food addiction. The first study in the general population (n=118) found that the majority of participants did not meet the criteria for a "diagnosis" of food addiction (90.68%), with a prevalence rate of food addiction found to be 9.32% in a sample of the general population. Further, a statistically significant relationship was evident between food addiction and having a long-term mental health condition, with the vast majority of participants who met the criteria for food addiction also reporting a long-term mental health condition (81.82%). Thus, it was evident that further research assessing the prevalence of food addiction

in a population with mental health conditions was warranted. The second study assessed the prevalence of food addiction in a sample of a population with severe mental illness (n=94). Severe mental illness was defined as a diagnosis of schizophrenia, schizoaffective disorder or bipolar disorder. The findings indicated that the 73.40% of the sample with severe mental illness did not meet the criteria for food addiction. The prevalence rate of food addiction in this sample of a population with severe mental illness was found to be 26.59%. Therefore, it is apparent that the prevalence rate of food addiction is higher among those with mental health problems than in the general population. Further research is needed to delineate the relationship between food addiction and mental health conditions in general as well as between food addiction and specific mental illnesses. In addition, future studies should also seek to clarify the relationship between food addiction, mental illness, and a number of key variables such as sex, age, BMI, social support and impulsivity.

NO. 98

HEALTH CARE RESOURCE USE IN SCHIZOPHRENIA PATIENTS TREATED WITH LONG-ACTING INJECTABLE ANTIPSYCHOTICS: RISPERIDONE VERSUS PALIPERIDONE PALMITATE

Poster Presenter:Kruti Joshi, M.P.H.
Lead Author: Xiaoyun Pan, Ph.D.
Co-Author(s): Rosa Wang, M.H.A., Carmela Benson, M.S.

SUMMARY:

Background: Schizophrenia is a devastating chronic condition, with annual prevalence rates among the U.S. adult population of about 1.1%. Schizophrenia requires lifelong treatment, resulting in a high economic burden. In one study, the overall annual costs associated with schizophrenia in the U.S. were estimated to be $62.7 billion. Despite the availability of different types of long-acting injectable antipsychotics (LAI), evidence comparing effectiveness between these LAIs is lacking. This study compared patient demographic and clinical characteristics and health care resource use (HRU) among patients with schizophrenia treated with risperidone LAI versus paliperidone palmitate (PP). **Methods:** Two cohorts of adults (18 years or older) with schizophrenia initiating risperidone LAI or PP between July 1, 2007, and December 31, 2012 (index event) were identified from a U.S. Commercial and Medicare Supplemental Insurance database. All patients had continuous enrollment for at least six months prior to and 12 months following the index date. Patient clinical and demographic characteristics at baseline were assessed and compared. All-cause and mental health-related HRU by component in the 12-month post-index period were compared between the two cohorts. Components of HRU included inpatient hospitalization, outpatient visits, emergency room (ER) visits and doctor's office visits. Propensity score matching was performed to adjust for the baseline differences. Student t-tests and chi-square tests were performed to test the statistical difference between the matched LAI cohorts. Multivariate regression analyses were conducted to assess the impact of initial LAI dosing regimen on subsequent HRU after controlling for patient characteristics and pre-index HRU. Logistic regressions estimated the adjusted odds ratio (aOR) to measure the likelihood of HRU, while Poisson regressions estimated the adjusted incidence rate ratio (aIRR) to measure the number of health care visits. **Results:** After propensity score matching, baseline patient characteristics were similar between the two LAI cohorts (n=499 each). Overall, the mean age was 39 years, 57% were male and 43% were female. Substance abuse other than alcohol abuse (43%) and depression (37%) were the most common comorbid conditions. Compared to the risperidone LAI cohort, the PP cohort was significantly less likely to be hospitalized (aOR=0.72, 95% confidence interval [CI]: 0.55–0.95), were more likely to visit a doctor (aOR=1.48, 95% CI: 1.01–2.18), had fewer inpatient days (aIRR=0.86, 95% CI: 0.82–0.90), fewer ER visits (aIRR=0.67, 95% CI: 0.61–0.73) and more doctor's office visits (aIRR=1.54, 95% CI: 1.50–1.59). Results were consistent for mental health-related HRU. **Conclusion:** Patients with schizophrenia treated with PP incurred fewer hospitalizations and ER visits than those treated with risperidone LAI. These findings highlight the value of PP in the treatment of schizophrenia.

NO. 99

DEPRESSIVE SYMPTOM PROFILES INDICATING THE POTENTIAL FOR DEPRESSION IN ELDERLY PATIENTS WITH CHRONIC PHYSICAL DISEASES

Lead Author: Seon-Cheol Park
Co-Author(s): Se-Hoon Shim, Sang Woo Hahn, Han Yong Jung, Hwa-Young Lee, Joonho Choi

SUMMARY:

In this study, we identified the depressive symptom profiles indicating the potential for depression and will present the optimal cut-off value of subscore on depressive symptom profiles to detect depression in elderly subjects with chronic physical diseases consisting of diabetes, chronic obstructive pulmonary disease/asthma and coronary artery disease using the Patient Health Questionnaire-9 (PHQ-9). 231 elderly patients with chronic physical diseases were recruited from a university-affiliated general hospital in South Korea. The potential for depression was detected based on a ≥8 score on the Hamilton Depression Rating Scale (HAMD). While adjusting for the potential effects of confounding variables, depressive symptom profiles were compared between those with and without depression. Binary logistic regression modeling was fitted to identify the depressive symptom profiles independently associated with the potential for depression. Receiver operating characteristics (ROC) curve analysis was used to present the optimal cut-off value of subscore on the depressive symptom profiles of the PHQ-9. Potential for depression was estimated in 18.2% cases (n=42). Greater severities of all nine depressive symptoms in the PHQ-9 were presented in those with depression rather than those without depression. A binary logistic regression model presented that little interest (adjusted odds ratio [aOR]=4.648, p<0.0001), reduced/increased sleep (aOR=3.269, p<0.0001), psychomotor retardation/agitation (aOR=2.243, p=0.004) and reduced concentration (aOR=16.116, p<0.0001) were independently associated with increased likelihood of the potential for depression. ROC curve analysis indicated that the optimal cut-off score on the items for little interest, reduced/increased sleep, psychomotor retardation/agitation and reduced concentration (PHQ-9) for detecting the potential for depression was 4 with 61.9% sensitivity and 91.5% specificity (area under curve [AUC]=0.937, p<0.0001). Our findings suggested that the diagnostic weighting of little interest, reduced/increased sleep, psychomotor retardation/agitation and reduced concentration is needed to detect depression among elderly patients with chronic physical diseases. **Keywords:** Depression, Elderly, Chronic Physical Diseases, Patient Health Questionnaire-9 (PHQ-9)

NO. 100

FACTOR STRUCTURE OF THE CLINICIAN-RATED DIMENSIONS OF PSYCHOSIS SYMPTOM SEVERITY IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Seon-Cheol Park
Co-Author(s): Se-Hoon Shim, Sang Woo Hahn, Han Yong Jung, Joonho Choi, Kang Uk Lee

SUMMARY:
DSM-5 has proposed the use of the Clinician-Rated Dimension of Psychosis Symptom Severity (CRDPSS) for evaluating the various symptoms of schizophrenia. To our knowledge, despite these discussions, the dimensional structure of the CRDPSS has hardly been studied. We therefore identify the factor solution of the CRDPSS. 166 inpatients with schizophrenia (diagnosed with the *DSM-5*), age ≥18 years and ≤65 years, and length of hospital stay ≥2 weeks, were recruited in Korea. Half were men (51.5%). Their mean age and age at onset were 46.5 (SD=11.2) and 25.2 (SD=13.2) years, respectively. Mean scores on hallucinations, delusions, disorganized speech, abnormal psychomotor behaviors, negative symptoms, impaired cognition, depression and mania were 2.04 (SD=1.30), 2.27 (SD=1.16), 1.62 (SD=1.35), 1.16 (SD=1.16), 2.01 (SD=1.24), 1.22 (SD=1.22), 0.51 (SD=0.70) and 0.19 (SD=0.48), respectively. An exploratory factor analysis was conducted on the CRDPSS, with principle components extracted by the varimax method. The number of factors in the solution was estimated on a scree plot using eigenvalues greater than one. In addition, only a loading greater than 0.40 was considered to reveal a clear factor structure and content. As a result, Bartlett's test for sphericity was significant (ς‡2 (166)=468.72, p<0.001), and the total variance of the factor solution was 70.69%. The poster will provide the factor loadings for a three-factor solution. The first factor consists of the domains for delusions, hallucinations, disorganized speech and abnormal psychomotor behavior and is designated "positive/speech." The second factor consists of the domains for negative symptoms and impaired cognition and is named "negative/cognition." The third factor consists of the domains for depression and mania and is designated "depression/mania." Our investigation has the virtue of pioneering research into the evaluation of patients with schizophrenia using the CRDPSS. In summary, it shows that the eight-domain CRDSS has a three-factor structure consisting of positive/speech, negative/cognition and depression/mania factors. Pearson's correlations indicate that all three factors have favorable concurrent and divergent validity. Hence, our findings shed light on the heterogeneous symptom components of schizophrenia.

NO. 101

PREDICTING PLACEBO RESPONDERS: SHIFTING REPORT FRAMES

Lead Author: Steven Pashko, Ph.D.

SUMMARY:

Objective: Develop a new theory for the cause of placebo response and produce an empirically testable method for the a-priori identification of placebo responders. **Background:** Within dual human information-processing systems theory, two views have been well characterized within the behavioral economics literature; the rational-cognitive information system utilizes the left brain's language capability and processes conceptual information, whereas the experiential information system utilizes the right brain and processes perceptual information. Though the right brain cannot report processed perceptual information linguistically, decisions based on its view can be determined through actions performed. Self-reports of psychological status vary significantly depending on which information processing system predominates. It is here theorized that shifting between reporting from the view of conceptually based and perceptually based information processing may cause the placebo effect. **Methods:** The shift of dominance of the system of processing can be provoked experimentally through the self-identity/ body swap paradox; in all study subjects, conflicting perceptual inputs cause the unlikely perception that a person's body has been swapped with a mannequin's. The shift seemingly occurs when conviction in one's perceptual view overrides the conceptual one. **Results:** Hansel, et al., using this cognitive phenomenological conflict procedure, found support for pain tolerance increases in subjects whose self-identity was shifted. Shifting between reporting perceptual experience plus attendant conceptualizations (e.g., pain plus thoughts about it) to only the perceptual experience (e.g., pain alone) may be the causal mechanism. Proposed here is that the placebo effect occurs in people who 1) Have a higher degree of flexibility in shifting between conceptual and perceptual reporting and 2) Initially report from the rational-cognitive (conceptual) view and then from the experiential (perceptual) one. **Conclusion:** Determining a person's propensity (e.g., increased speed and/or completeness) to shift using a cognitive phenomenological "challenge test" (i.e., making the shift stimulus unlike a human form) may yield a method for the a-priori prediction of placebo responders. If proven as a causal factor, a less cumbersome test that correlates with it could and should be developed.

NO. 102

CLINICAL LYCANTHROPY EXACERBATED BY COMORBID CANNABIS USE DISORDER: A CASE REPORT

Lead Author: Rachit Patel, M.D.

SUMMARY:

Background: Clinical lycanthropy is a rare form of reverse intermetamorphosis, a delusional misidentification syndrome in which patients believe that they are undergoing transformation into a wolf. Lycanthropy has been recorded since antiquity, and a recent review of the medical literature from 1850 onward found that out of 56 original case descriptions of metamorphosis into an animal, only 13 fulfilled the criteria of clinical lycanthropy. Only three out of the 13 cases describe the syndrome in the setting of comorbid substance abuse. Furthermore, of the various somatic hallucinations and perceived changes in physical appearance, only two other cases describe mirrored self-misidentification (i.e., seeing the face of a wolf in the mirror). Neither of these was in the setting of substance abuse. **Case:** The patient is a 27-year-old Caucasian male with a history of cannabis use since age 14 with several inpatient psychiatric hospitalizations for exacerbation of psychotic symptoms, usually in the setting of cannabis use and treatment noncompliance. The patient was diagnosed with schizophrenia as evidenced by derogatory command auditory hallucinations of "empaths" communicating with him and paranoid delusions that resulted in his attempt to obtain satisfaction by appeal to government agencies. One hospitalization was precipitated by a neighbor calling police after the patient knocked on his door claiming to be a werewolf. Routine laboratory studies were negative, and prior head CT was unremarkable. Urine toxicology was positive for cannabinoids, and the patient admitted to daily cannabis use, up to four times per day. During his hospitalization, the patient perseverated that that he was changing into a werewolf, a belief he had held for one to two months. He would spend long hours in the bathroom staring at himself in the mirror, stating that he was observing his face turning into that of a wolf. He perceived seeing increased facial hair and the eyes of a wolf in the mirror. He was treated with

haloperidol oral solution 30mg/day and benztropine 2mg/day. The patient also received haloperidol decanoate 75mg IM. On this regimen, his conviction that he was a werewolf, along with his other psychotic symptoms, abated. **Conclusion:** Although the known cases of clinical lycanthropy all share the common delusional belief of being transformed into a wolf, patients can present with a variety of different somatic hallucinations and perceived changes in physical appearance. It is well established that the condition tends to occur in the context of major psychiatric disorders such as schizophrenia, psychotic depression and bipolar disorder. However, very few cases have been described in the setting of comorbid substance use. This case adds to the limited literature on lycanthropy and describes a case of clinical lycanthropy with mirrored self-misidentification in a patient with schizophrenia whose symptoms were exacerbated by comorbid cannabis use disorder.

NO. 103

TRENDS IN DEPRESSION-RELATED HOSPITALIZATIONS IN THE UNITED STATES FROM 2008 TO 2012

Lead Author: Ankur Patel, M.D.
Co-Author(s): Rashi Aggarwal, M.D., Petrous Levounis, M.D., M.A.

SUMMARY:

Objective: Determine trends of depression-related hospital admission in the United States from 2008 to 2012 utilizing a nationally representative sample. We examined factors associated with hospitalization (race, age group, payer, length of stay, average hospital cost, region and income) to gain a better understanding of which types of patients are more or less likely to be admitted with depression as the primary diagnosis. **Methods:** We used the National Inpatient Sample data. All hospitalizations with a primary diagnosis of major depression were selected. Descriptive statistics were used to summarize the prevalence of estimates of major depression-related hospitalizations and several patient- and hospital-level characteristics. We performed robust regression analyses to examine the simultaneous association of all independent variables of interest with the outcome variables. **Results:** During the five-year study period, a total of 465,434 hospitalizations were primarily categorized as major depression-related out of 39,073,390 total hospitalizations. The highest number of depression-related hospitalizations was reported among Whites, whereas Asian/Pacific Islander and Native American populations had the lowest such admission as compared to other racial groups. The results show age, payer, hospital division and zip-income are significant predictors of length of stay, as well as total hospital charges per admission, for the study period. Furthermore, compared to Whites and Blacks, Hispanic and Asians/Pacific islanders have higher hospital charges per admission, while Native Americans have lower hospital charges per admission. **Conclusion:** Although, trends of depression-related hospitalizations have shown a steady upward incline over the years, racial/ethnic and economic disparities in use of mental health services are significant and concerning. Our results reinforce this concern.

NO. 104

OUTCOMES AMONG SCHIZOPHRENIA PATIENTS RECENTLY HOSPITALIZED OR NONADHERENT TO ANTIPSYCHOTIC THERAPY

Lead Author: Jacqueline Pesa, Ph.D., M.P.H.
Co-Author(s): Dilesh Doshi, Li Wang, Huseyin Yuce, Onur Baser

SUMMARY:

Background: Medication nonadherence in patients with schizophrenia is a significant problem threatening successful treatment outcomes and often leading to costly hospitalizations. Long-acting injectable antipsychotics, such as paliperidone palmitate once-monthly (PP1M), are often recommended in patients with demonstrated nonadherence or recurrent relapses. **Objective:** Compare medication treatment patterns, all-cause health care utilization and costs among schizophrenia patients with a recent hospitalization and/or poor antipsychotic adherence and subsequent treatment with PP1M or an oral atypical antipsychotic (OAT). **Methods:** Adults (aged ≥18 years) with diagnosed schizophrenia, two or more claims for PP1M or two or more claims for the same OAT medication, and continuous enrollment of one year or more pre- and post-index date (PP1M or OAT initiation) were identified in California Medicaid (Medi-CAL) data (July 1, 2009 to December 31, 2013). A subset was further identified based on one or more mental health-related hospitalization within three months prior to index and/or poor adherence (proportion of days covered [PDC]<0.8 over six months prior to index) and further classified into either a PP1M or OAT cohort. Baseline demographic and clinical variables were analyzed using Chi-square

for categorical variables and Student's t-tests for continuous variables. Logistic regression was used to calculate a propensity score for each patient, representing the likelihood of being prescribed PP1M followed by a 1:1 matching. Treatment patterns (discontinuation, persistence, PDC, switching), all-cause health care utilization and cost outcomes over the 12-month follow-up period were compared between matched cohorts using Chi-square and t-tests for categorical and continuous variables. **Results:** The well-matched cohorts included 854 patients (PP1M: n=427; OAT: n=427). The average age was 40 years, and 56% were male. Over a 12-month follow-up, PP1M patients had higher mean PDC (0.64 vs. 0.56, p<0.0001) compared to OAT patients. A lower percentage of patients in the PP1M cohort had an inpatient visit (64% vs. 75%, p=0.0002), and the mean number of inpatient visits (5.09 vs. 7.58, p=0.0001) and emergency room (ER) visits (2.25 vs. 3.02, p=0.0448) were lower for PP1M patients. While mean pharmacy costs were higher for the PP1M cohort ($15,573 vs. $9,229, p<0.0000), mean annual costs attributable to inpatient visits ($6,200 vs. $9,427, p=0.0110) and outpatient office visits ($858 vs. $1,391, p=0.0196) were significantly lower with no significant difference in mean total costs (medical and pharmacy) ($26,056 vs. $24,815, p=0.4995). **Conclusion:** Among this population of schizophrenia patients with a recent hospitalization and/or poor antipsychotic adherence, those initiated on PP1M had significantly fewer hospitalizations and ER visits, lower inpatient and outpatient office costs, and improved PDC compared to a matched cohort of patients treated with an OAT.

NO. 105

MOTIVES TO USE DRUGS IN BODY DYSMORPHIC DISORDER

Lead Author: Katharine A. Phillips, M.D.
Co-Author(s): Viviana Padilla-Martinez, Ph.D., Joseph Donahue, B.A., Megan M. Kelly, Ph.D.

SUMMARY:

Background: Lifetime rates of drug use disorders in body dysmorphic disorder (BDD) patients are high (17–34%). Only one prior study has examined motives for substance use in BDD, finding that a majority of individuals with BDD use substances to alleviate BDD-related distress. No studies have examined motives to use drugs in BDD using a standardized measure. **Methods:** This study examined associations between motives to use drugs and clinical correlates of BDD in 53 adults with BDD (32 with current BDD, 11 in partial remission and 10 in full remission) who completed the Drug Use Motives Questionnaire (DUMQ). Associations between DUMQ subscale scores (coping motives [i.e., using drugs to cope with negative affect], enhancement motives [i.e., using drugs to enhance positive affect] and social motives [i.e., using drugs for affiliative reasons]) were examined. We also examined associations between drug use motives, lifetime BDD severity, using drugs because appearance concerns are upsetting, psychiatric comorbidity and suicidality (e.g., history of attempted suicide). **Results:** Coping motives were positively associated with the item "using drugs because body image concerns upset you" (r=0.49, p<0.001), history of a drug use disorder (r=0.45, p<0.001) and attempted suicide (r=0.28, p=0.046). Enhancement motives were positively associated with a history of a drug use disorder (r=0.37, p=0.006). Social motives were not significantly associated with BDD-related clinical variables. In regression analyses, controlling for age and BDD status (partial or full criteria for BDD versus full remission), using drugs because appearance concerns are upsetting, history of a drug use disorder and history of attempted suicide contributed the most unique variance to coping motives for using drugs. History of a drug use disorder contributed the most unique variance to enhancement motives for using drugs. **Discussion:** As we previously found for alcohol use in individuals with BDD, BDD symptoms are strongly associated with coping motives for drug use, suggesting self-medication of BDD-related distress. These findings suggest the importance of treating BDD symptoms in individuals with a substance use disorder. Further examination of drug use motives, including use of drugs to reduce BDD-related distress, will inform understanding and treatment of BDD.

NO. 106

MEDICAID SPENDING IN SCHIZOPHRENIA PATIENTS REACHING VERSUS NOT REACHING STABILIZED MAINTENANCE WITH ONCE-MONTHLY PALIPERIDONE PALMITATE

Poster Presenter:Erik Muser, Pharm.D., M.P.H.
Lead Author: Dominic Pilon
Co-Author(s): Bruno Emond, Yongling Xiao, Tony Amos, Patrick Lefebvre, Carmela Benson

SUMMARY:

Background: Continuity of treatment is an ongoing challenge in patients with schizophrenia, leading to

relapse and increases in health care resource utilization (HRU). Once-monthly paliperidone palmitate (PP1M) is a long-acting injectable therapy for the treatment of schizophrenia. With FDA approval of once-every-three-months paliperidone palmitate (PP3M), it is important to understand PP1M patients who might be candidates for PP3M and the impact of continuous treatment on health care costs and HRU. **Objective:** Evaluate the impact of reaching vs. not reaching stabilized maintenance with PP1M on HRU and health care spending among Medicaid beneficiaries diagnosed with schizophrenia. **Methods:** Data between July 2008 and March 2014 for Medicaid-covered adults with schizophrenia from FL, IA, KS, MO, MS and NJ who were initiated on PP1M (index date) were analyzed. Baseline characteristics were assessed during the 12-month pre-index period. Stabilized maintenance was defined as having three or more consecutive claims for PP1M (beyond the first two initiation doses) with the same dose strength and ≤60 days between claims. During the 12-month post-index period, patients reaching vs. not reaching stabilized maintenance were compared for HRU (inpatient [IP] visits, emergency room [ER] visits and rehospitalizations) using summary statistics and chi-square tests and for medical and pharmacy costs using mean monthly cost differences (MMCDs) calculated using a linear regression model adjusting for baseline pharmacy and medical costs (a nonparametric bootstrap was used to obtain p-values). All costs were inflated to 2014 $US. No adjustment was made for multiplicity. **Results:** Among 4,482 schizophrenia patients initiated on PP1M, mean age was approximately 40 years, and 42% were female. A total of 2,012 (45%) patients reached stabilized maintenance. Patients reaching stabilized maintenance had higher baseline pharmacy costs relative to those not reaching stabilized maintenance (MMCD=$283, p<0.001), but appeared to have similar baseline medical costs (MMCD=$170, p=0.262). For the post-index period, a significantly lower proportion of patients reaching stabilized maintenance had an IP visit (35% vs. 49%, p<0.001), ER visit (44% vs. 54%, p<0.001) or 30-day rehospitalization (30% vs. 42%, p<0.001). During the post-index period, patients reaching stabilized maintenance had lower medical costs (adjusted MMCD=-$284, p=0.001) driven by lower IP costs (adjusted MMCD=-$308, p<0.001), offsetting almost half of the higher pharmacy costs (adjusted MMCD=$597, p<0.001) and resulting in higher total health care costs (adjusted MMCD=$313, p<0.001) compared to patients not reaching stabilized maintenance. **Conclusion:** A lower proportion of patients reaching stabilized maintenance with PP1M had an IP visit, ER visit or 30-day rehospitalization, resulting in lower medical costs that offset almost half of the higher pharmacy costs compared to patients not reaching stabilized maintenance.

NO. 107

LOW HERITABILITY OF NEOPTERIN IN THE OLD ORDER AMISH

Lead Author: Uttam Raheja, M.B.B.S.
Co-Author(s): Sarah Stephens, Ph.D., Dietmar Fuchs, M.D., Hira Mohyuddin, Mary Pavlovich, Toni Pollin, Ph.D., Alan Shuldiner, M.D., Braxton Mitchell, Ph.D., Teodor T. Postolache, M.D.

SUMMARY:

Background: Neopterin is a biomarker for cell-mediated immunity (CMI), oxidative stress and psychiatric disorders such as depression. Heritability of immune markers is important in order to understand their usefulness as a potential trait versus state indicator in neuropsychiatric disorders. The Old Order Amish is an ideal population for heritability studies. We therefore examined the heritability of neopterin in Amish adults. **Methods:** Fasting blood draw was obtained in 2,016 Amish individuals who were 18 years of age or older. Neopterin concentrations were determined using enzyme-linked immunosorbent assay (ELISA) with sensitivity of 2nmol/L neopterin. Quantitative genetic procedures were used to estimate heritability of neopterin with adjustment for age, gender and household. **Results:** Serum neopterin levels were obtained from 2,016 Old Order Amish adults (853 men and 1,165 women). Average age (±SD) was 44.0 (±17.0) years. Mean neopterin level was 6.19 (±2.97) nmol/L, with a range of 3.19 to 48.94nmol/L. As neopterin values were not normally distributed, a log transformation was applied. Heritability of log-neopterin was found to be 0.079 unadjusted (p=0.010) and 0.065 after adjusting for age, gender and household (p= 0.033). The shared household effect was 0.062 (p<0.020). **Conclusion:** We found a very low heritability of neopterin in the Old Order Amish, in contrast to the moderate to high heritability previously reported for other inflammatory markers such as CRP, immunoglobulins and interleukins. Non-household-related factors such as occupation and school participation may be more important for pathogen and allergen exposure, including viral epidemics, and as a consequence,

contributing to a low heritability of neopterin. Considering its low heritability and apparent little influence by genes, neopterin may be a very useful marker to document the longitudinal course, naturalistic and interventional, of cellular immune responses and oxidative stress processes previously linked cross-sectionally to several psychiatric disorders. The study was supported by the Mid-Atlantic Nutrition Obesity Research Center (NORC) Pilot grant (PI Postolache), offspring of the parent grant P30 DK072488, and in part by the University of Maryland Joint Institute for Food Safety and Applied Nutrition through the cooperative agreement with the FDA: FDU.001418 (subaward PI Postolache) and the Rocky Mountain MIRECC. The study benefited from prior support from the National Institute of Mental Health of the National Institutes of Health under the K18MH093940 (PI Postolache).

NO. 108

THE SERUM S100B AS A POTENTIAL MARKER IN BIPOLAR SPECTRUM DISORDER IN ADOLESCENTS AND YOUNG ADULTS: PRELIMINARY RESULTS

Poster Presenter:Andrzej Rajewski, M.D., Ph.D.
Lead Author: Aleksandra Rajewska-Rager, M.D., Ph.D.
Co-Author(s): Monika Dmitrzak-Weglarz, Natalia LepczyÅ„ska, Maria SkibiÅ„ska

SUMMARY:
Background: In recent years, there has been a growing interest in the S100B protein and its role in affective disorders due to the postulated glial hypothesis of affective disorders and brain neuroplasticity. However, so far there is a lack of studies taking into account the evaluation of the level of protein S100B in adolescents and young adults. The purpose of this prospective study was to investigate the relationship between S100B levels in the state of severity of symptoms and after reaching stabilized mood in the young patient with mood disorders meeting spectrum bipolar disorder criteria. **Methods:** We measured levels of S100B in serum of 33 adolescents and young adults (age 14–24) with mood disorders meeting spectrum bipolar disorder criteria. All patients were diagnosed according to *DSM-IV* criteria by using structured diagnostic interviews (SCID and KIDI). Serum S100B levels and HAM-D, Beckand YADRS scores were assessed at baseline (acute symptoms), after three months with stabilized mood and after 12 months. **Results:** We found a statistically significant correlation between the prevalence of depressive symptoms in patients at baseline and higher levels of protein S100B compared to patients without symptoms of depression (p=0.041). The results of our research also demonstrated the correlation between the change of diagnosis (from major depression in the direction of bipolar disorder) and higher levels of protein S100B (p=0,029). **Conclusion:** Our preliminary results suggest that protein S100B might be a promising marker of mood disorders both in adults and younger patients. This data need replication studies on a larger group of young patients. This research was funded by the National Science Centre in Poland, grant number 2011/03/D/NZ5/06146.

NO. 109

TARDIVE DYSKINESIA AND VALBENAZINE (NBI-98854) RESPONSE AS A FUNCTION OF CONCOMITANT ANTIPSYCHOTIC USE

Lead Author: Gary Remington, M.D.
Co-Author(s): Jean-Pierre Lindenmayer, Joshua Burke, Bill Aurora, Christopher F. O'Brien

SUMMARY:
Background: Tardive dyskinesia (TD) is a persistent movement disorder induced by chronic antipsychotic exposure, for which there are currently no FDA-approved treatments. Valbenazine (VBZ; NBI-98854) is a novel, highly selective inhibitor of vesicular monoamine transporter 2 under investigation for use in TD. VBZ has exhibited a favorable safety profile in early Phase 1 and 2 studies. The KINECT 2 study (NCT01733121) was a dose-escalating trial evaluating safety and efficacy of VBZ for TD in subjects with schizophrenia, mood disorder or gastrointestinal disorder and demonstrated a significant and clinically meaningful improvement in TD for VBZ versus a placebo. To evaluate the impact of concomitant medication use in this trial, outcomes for schizophrenia and mood disorder (e.g., depression, bipolar disorder) subjects from KINECT 2 were compared among subsets grouped by antipsychotic use. **Methods:** KINECT 2 was a prospective, randomized, double-blind, six-week, placebo-controlled trial. VBZ or placebo (1:1) was administered once daily for six weeks. All subjects randomized to VBZ received 25mg through week 2. At week 2, the dose could be titrated to 50mg or maintained. At week 4, the dose could be titrated to 75mg, maintained or reduced to the previous dose. The primary endpoint was change from baseline (CFB) to week 6 in Abnormal Involuntary Movement Scale (AIMS) score. AIMS videos were scored by two

central raters who were blinded to study visit sequence and treatment. A key secondary endpoint was Clinical Global Impression of Change-Tardive Dyskinesia (CGI-TD) score. In this exploratory analysis, all randomized subjects who had at least one post-randomization AIMS score were grouped by antipsychotic use (atypical only, typical only or none), and descriptive analyses were performed. **Results:** 102 subjects were randomized; 76% of VBZ subjects reached the maximum allowed dose of 75mg. Antipsychotics, antidepressants and anxiolytics were the most common concomitant medications, taken by ≥40% of subjects in each group. Subjects were classified into medication subgroups (VBZ, placebo): atypical only (n=25, n=24), typical only (n=5, n=7) and none (n=13, n=11). As previously reported, the primary endpoint of week 6 CFB in AIMS score was significantly greater in the VBZ group than the placebo for the overall population (p=0.0005). Mean CFB on AIMS for VBZ indicated greater improvement relative to placebo overall and across all subgroups (mean CFB; VBZ, placebo): all (-3.6, -1.1), atypical only (-2.6, -1.5), typical only (-2.4, -0.4) and none (-5.9, 0). Similar results were observed for the CGI-TD. **Conclusion:** In this exploratory analysis, VBZ improved TD regardless of the use or type of antipsychotic drug concomitantly administered. Despite the small sample size, results in all subgroups were consistent with those observed for the overall population on both a measure of TD symptoms (AIMS) as well as a measure of clinically meaningful benefit (CGI-TD).

NO. 110

CORRELATES AND PATIENT-REPORTED OUTCOMES OF REACHING EARLY MAINTENANCE THERAPY ON PALIPERIDONE PALMITATE IN COMMUNITY BEHAVIORAL HEALTH ORGANIZATIONS

Poster Presenter:Jeffrey Anderson, Sc.D.
Lead Author: Kelly Rich, B.S.
Co-Author(s): Kruti Joshi, Erik Muser, Veronica Alas, Carmela Benson

SUMMARY:

Background: Three-month paliperidone palmitate (PP3M) was FDA-approved in May 2015 for treatment of schizophrenia in patients adequately treated with one-month paliperidone palmitate (PP) for at least four months. The objectives ofthis study were to 1) Identify factors associated with reaching early maintenance therapy (MT) and 2) Assess downstream patient-reported outcomes by early MT status among patients on PP who could be potential candidates for PP3M. **Methods:** This retrospective analysis used data from Research and Evaluation of Antipsychotic Treatment in Community Behavioral Health Organizations Outcomes (REACH-OUT), a prospective, observational study from 2010–2013. Early MT was defined as receipt of at least three consecutive PP injections at equal dosage, with gaps between consecutive claims of 60 days or more and within four months of the first documented injection. Patient-caregiver therapeutic relationships were assessed using the Scale to Assess Therapeutic Relationships, Patient (STAR-P) and Clinician (STAR-C) versions. Psychosocial functioning was measured using the Personal and Social Performance (PSP) scale. A proprietary machine learning platform, Reverse Engineering and Forward Simulation (REFSTM) was applied to generate an ensemble of prediction models identifying factors associated with reaching early MT. Odds ratios (ORs) with standard deviation were calculated to assess the distribution of effect estimates across the ensemble. To evaluate outcomes of early MT, generalized linear mixed regression was used to estimate ORs (binary outcomes) or slopes (ÃŸs; continuous outcomes), with 95% confidence intervals (CIs). **Results:** We identified 371 patients newly initiating (PP-N; n=128) or continuing (PP-C; n=243) PP. Eighty-three percent (n=309) of patients achieved early MT. Favorable patient-caregiver relationships were identified as consistent correlates of early MT in the REFSTM prediction model ensemble (STAR-C, >36 vs. ≤36, OR±SD: 1.72±0.16; STAR-P, >36 vs. ≤36, OR±SD: 1.37±0.12). Positive correlates of early MT in adjusted logistic regression included private residence (OR=2.27, 95% CI [1.14, 4.55]) and prior hospitalization (OR=2.31, 95% CI [1.15, 4.86]) Negative correlates of early MT included substance abuse (OR=0.37, 95% CI [0.19, 0.70]), lung conditions (OR=0.37, 95% CI [0.15, 0.99]) and victimization (OR=0.40, 95% CI [0.18, 0.92]). Achievement of early MT was predictive of higher PSP score (ÃŸ=3.55, 95% CI [0.27, 6.83]) and subsequent treatment adherence (proportion days covered ≥80% vs. <80%, OR=3.91, 95% CI [2.25, 6.82]). **Conclusion:** A high proportion of patients on PP in the REACH-OUT study achieved early MT. Stable living situations and favorable therapeutic relationships were correlated with early MT status. Early MT was associated with better psychosocial functioning and subsequent continuing treatment adherence. Patients achieving early MT may consider transitioning to PP3M to sustain symptom control.

NO. 111

A RANDOMIZED CONTROLLED TRIAL OF TARGETED TRAINING IN ILLNESS MANAGEMENT VERSUS TREATMENT AS USUAL IN PEOPLE WITH SERIOUS MENTAL ILLNESS AND DIABETES

Lead Author: Martha Sajatovic, M.D.

Co-Author(s): Douglas Gunzler, Ph.D., Stephanie W. Kanuch, M.Ed., Kristin Cassidy, M.A., Curtis Tatsuoka, Ph.D., Richard McCormick, Ph.D., Carol Blixen, Ph.D., Adam T. Perzynski, Ph.D., Douglas Einstadter, Ph.D., Charles Thomas, B.A., Mary Ellen Lawless, M.A., R.N., Siobhan Martin, R.N., Corinna Falck-Ytter, M.D., Eileen Seeholzer, M.D., Neal V. Dawson, M.D.

SUMMARY:

Objective: Individuals with serious mental illness (SMI) die earlier than the general population, losing on average 9–32 years of life. Premature mortality is mostly due to medical comorbidities such as diabetes (DM). Targeted Training in Illness Management (TTIM) is a novel self-management approach that targets SMI and comorbid DM (SMI-DM) concurrently. TTIM focuses on active engagement in care and uses peer educators to facilitate behavioral change. **Methods:** This prospective, 60-week, randomized controlled trial assessed effects of TTIM versus. treatment as usual (TAU) in 200 individuals with SMI-DM. TTIM is designed to be practical in primary care and improve SMI symptoms, functioning, general health and DM control. Assessments were conducted at screening, baseline, 13 weeks, 30 weeks and 60-week follow-up. SMI symptom outcomes included the Clinical Global Impression (CGI), Montgomery Åsberg Depression Rating Scale (MADRS) and the Brief Psychiatric Rating Scale (BPRS). Functional outcomes were the Global Assessment of Functioning (GAF) and the Sheehan Disability Scale (SDS). General health outcome was the Short Form 36 (SF-36), and DM outcome was serum glycosylated hemoglobin (HgA1c). **Results:** Average age was 52.7 (SD=9.5), with 64% women, 54% African American and 8.5% Hispanic. Psychiatric diagnoses were major depression (47.5%), schizophrenia (24.5%) and bipolar disorder (28%). Individuals had SMI for nearly two decades on average. Baseline depressive symptom severity was substantial, while psychosis severity was modest. Average GAF score was just over 50. Nearly half were insulin users, and individuals had lived with DM for over a decade. There were no significant differences between TTIM and TAU in demographic and clinical variables. There was a greater improvement at 60 weeks in TTIM versus TAU participants in both CGI (p=0.0008) and MADRS (p=0.0156) and no difference between groups on BPRS. There was a greater improvement at 60 weeks in TTIM versus TAU in GAF (p=0.0031) and a trend for improvement on the SDS (p=0.0863). There was no significant group difference in SF-36 or HgA1c. In a restricted analysis using two-sample nonparametric tests of differences for individuals at or below the American Diabetes Association (ADA) recommended targets, individuals in TTIM had minimal change in HgA1c over a 60-week time period compared to TAU participants who had worsening of DM control. There continued to be a trend for better long-term maintenance of DM control in TTIM versus TAU participants, even at HgA1c levels that were slightly above ADA recommended targets. **Conclusion:** Compared to TAU, TTIM was associated with improved SMI symptoms and functioning. Group means on general health and DM control were not significantly different. However, among SMI-DM individuals with good to fair baseline DM control, TTIM was associated with better long-term DM control than TAU. Future analyses will explore mechanisms and drivers of sustained change in SMI-DM.

NO. 112

RESIDUAL PATIENT-REPORTED COGNITIVE DYSFUNCTION: A POTENTIAL PREDICTOR FOR RELAPSE IN MDD?

Lead Author: Delphine Saragoussi, M.D., M.P.H.

Co-Author(s): MaÃ«lys Touya, Pharm.D., M.Sc., Josep-Maria Haro, M.D., Ph.D., Bengt Jönsson, Ph.D., Martin Knapp, Ph.D., Sylvie di Nicola, M.Sc., Ioana Florea, M.D., Henrik Loft, Ph.D., M.Sc., Benoit Rive, Ph.D., M.Sc.

SUMMARY:

Objective: Prospective Epidemiological Research on Functioning Outcomes Related to Major Depressive Disorder (PERFORM) is a European two-year prospective observational cohort study. It included 1,457 patients treated for major depressive disorder (MDD). This analysis identifies predictors of relapse to determine if residual patient-reported cognitive dysfunction (PRCD) is one of the predictors. **Methods:** This study included outpatients from primary and secondary care practices age 18–65 with a *DSM-IV-TR* diagnosis of MDD initiating or switching to an antidepressant treatment in monotherapy. Patients with comorbid psychiatric disorders or neurodegenerative diseases were excluded. Relapse status was assessed at six months

in patients in remission and at two months based on either treatment change due to lack of efficacy or an increase in MDD symptoms as shown by a Patient Health Questionnaire (PHQ-9) score of 10 or more or a Montgomery-Åsberg Depression Rating Scale score of 22 or more or, if neither of the previous scales were assessed, a Clinical Global Impression-Severity Scale score of 4 or more. Quality of life (Short-Form Health Survey [SF-12]) and PRCD (Perceived Deficit Questionnaire [PDQ-5]) were assessed among other variables. Using an interim six-month dataset, clinically relevant factors identified from a literature review were tested in univariate logistic regression analyses; factors with $p<0.20$ were then combined in a multiple logistic regression followed by backward variables selection with $p<0.05$. Four factors were forced into the model as being expected predictors of relapse: country, age, sex and PHQ-9 score at two months. Sensitivity analyses consisted of forward selection method or alternative outcome definitions. **Results:** Among the 296 remitters at two months, 19.3% had relapsed at six months. Mean two-month PDQ-5 score was 8.8 in relapsers and 6.5 in non-relapsers; in multivariate analysis, one additional unit of PDQ-5 at two months was associated with a 16% increase in risk of relapse at six months (OR=1.16, 95% CI [1.04, 1.30]). Other significant relapse risk factors were male sex (OR=2.74, 95% CI [1.15, 6.54]) and a low score on the SF-12 physical component (OR=0.95, 95% CI [0.91, 1.00]). The results from the sensitivity analysis using the forward selection method were consistent for the PDQ-5 score (OR=1.16, 95% CI [1.04, 1.30]) and most of the other factors. The SF-12 physical component was replaced with chronic pain/fibromyalgia, which covers similar concepts. The OR of PDQ-5 was consistent across all other sensitivity analyses (between 1.12 and 1.18). **Conclusion:** Residual PRCD measured with PDQ-5 in remitted MDD patients appears to be a potential predictor of relapse. The extensive control for known predictors of relapse in the model and the consistent estimates for different definitions of relapse demonstrate the robustness of this finding. These results need to be confirmed in further studies.

NO. 113

PALIPERIDONE PALMITATE THREE-MONTH VERSUS ONE-MONTH FORMULATION IN PATIENTS WITH SCHIZOPHRENIA: A RANDOMIZED, DOUBLE-BLIND, NON-INFERIORITY STUDY

Lead Author: Adam Savitz, M.D., Ph.D.

Co-Author(s): Haiyan Xu, Isaac Nuamah, Paulien Ravenstijn, Adam Janik, Alain Schotte, David Hough, Wolfgang W. Fleischhacker

SUMMARY:

Background: This double-blind (DB), parallel-group, multicenter, phase-3 study was designed to test the non-inferiority of paliperidone palmitate three-month formulation (PP3M) to the currently marketed one-month formulation (PP1M) in patients (age 18–70) with schizophrenia previously stabilized on PP1M. **Objective:** At the conclusion of the session, the participant should be able to: 1) Recognize the efficacy and safety of paliperidone treatment in patients with schizophrenia; 2) Assess the function/dysfunction of the patient as an important component of recovery in schizophrenia treatment; 3) Identify the benefits of relapse prevention within schizophrenia and psychiatric clinics and aid to better coordinate mental health care. **Methods:** After screening (three weeks or less) and a 17-week, flexible-dosed, open-label (OL) phase (PP1M: day 1 [150mg eq. deltoid]; day 8 [100mg eq. deltoid]; weeks 5, 9 and 13 [50, 75, 100 or 150mg eq. deltoid/gluteal]), clinically stable patients were randomized (1:1) to PP3M (fixed dose, 175, 263, 350 or 525mg eq. deltoid/gluteal) or PP1M (fixed dose, 50, 75, 100 or 150mg eq. deltoid/gluteal) (48-week DB phase). **Results:** Overall, 1,016 of 1,429 OL patients entered the DB phase (PP3M: n=504; PP1M: n=512), and 842 completed it (including patients with relapse). PP3M was non-inferior to PP1M; relapse rates were similar in both groups (PP3M: n=37, 8%; PP1M: n=45, 9%; difference in relapse-free rate: 1.2% 95% CI [-2.7%, 5.1%], primary efficacy). Secondary endpoint results (changes from DB baseline in positive and negative symptom score total and subscale scores and Clinical Global Impression-Severity and Personal and Social Performance scores) were consistent with primary endpoint results. No clinically relevant differences were observed in pharmacokinetic exposures between PP3M and PP1M. Both groups had similar tolerability profiles; increased weight was the most common treatment-emergent adverse event (DB phase, 21% each). No new safety signals were detected. **Conclusion:** PP3M demonstrated a similar efficacy (non-inferior) and tolerability profile to PP1M in patients with schizophrenia previously stabilized on PP1M and is thus a unique option for relapse prevention in schizophrenia.

NO. 114

SYMPTOMATIC REMISSION STATUS IN SCHIZOPHRENIA PATIENTS TREATED WITH PALIPERIDONE PALMITATE (ONE-MONTH AND THREE-MONTH FORMULATIONS)

Lead Author: Adam Savitz, M.D., Ph.D.
Co-Author(s): Haiyan Xu, Isaac Nuamah, David Hough, Maju Mathews

SUMMARY:
Background: In this double-blind (DB), parallel-group, multicenter, phase-3 study (EudraCT no: 2011-004889-15), symptomatic remission was analyzed in patients (age 18–70) with schizophrenia following treatment with paliperidone palmitate one-month (PP1M) and three-month (PP3M) formulations. **Objective:** At the conclusion of the session, the participant should be able to: 1) Recognize the symptomatic remission and functional recovery in patients with schizophrenia following treatment with paliperidone; 2) Assess the function/dysfunction of the patient as an important component of recovery in schizophrenia treatment; 3) Identify the benefits of symptomatic remission and functional recovery within schizophrenia and psychiatric clinics and aid to better coordinate mental health care. **Methods:** Patients previously stabilized on PP1M and treated with fixed doses of PP3M (175, 263, 350 or 525mg eq. deltoid/gluteal) or PP1M (50, 75, 100 or 150mg eq. deltoid/gluteal) for 48 weeks were included in this analysis. Symptomatic remission was assessed according to Andreason's criteria (score of three or less on all Positive and Negative Symptom Score [PANSS] items: P1, P2, P3, N1, N4, N6, G5 and G9 for the last six months of DB treatment, with no excursion allowed). Functional remission was also assessed. **Results:** Consistent with the primary efficacy endpoint with similar relapse rates in both treatment groups (PP3M: n=37, 8%; PP1M: n=45, 9%; difference in relapse-free rate: 1.2% 95% CI [-2.7%, 5.1%]), the percentage of patients who showed symptomatic remission was similar and over 50% in both groups (PP3M: n=243/483, 50%; PP1M: n=260/512, 51%; relative risk of remission=0.98 95% CI [0.87, 1.11]). Among the remitters at entry into the DB phase, the percentage of patients who met the symptomatic remission criteria was similar in both groups across 48 weeks. The proportion of patients who maintained symptomatic remission and functioning remission (PSP score>70 during the last six months of DB treatment) was similar between both groups (PP3M: n=121/483, 25%; PP1M: n=136/512; 27%). **Conclusion:** Patients treated with paliperidone palmitate demonstrated higher symptomatic remission compared to remission rates published elsewhere, with similar rates in both treatment groups across all 48 weeks. PP3M can thus be considered a unique option for symptomatic remission in patients with schizophrenia previously stabilized on PP1M.

NO. 115

CLINICAL ANGER SCALE AMONG IRANIAN ADMITTED PATIENTS WITH SCHIZOPHRENIA

Poster Presenter:Farid Arman, M.D.
Lead Author: Jalal Shakeri, M.D.
Co-Author(s): Farid Arman, Hania Shakeri, Vahid Farnia

SUMMARY:
Background: A higher prevalence of violent behavior among patients with schizophrenia in comparison with the normal population has been demonstrated. The close association between violence and anger proposes that anger can be a predeterminant and predictive factor of violent actions. In this study, we estimated the anger scale among Iranian individuals with schizophrenia. **Methods:** Patients with schizophrenia who were admitted to the psychiatry ward of Farabi Hospital in Kermanshah between April 2012 and March 2014 were invited to participate in this investigation. Patients' demographic characteristics, including age, gender, occupation, marital status, educational level and previous history of hospitalization, were indexed in preprepared forms. The Clinical Anger Scale (CAS) was used to assess severity of anger. **Results:** A total of 152 patients with schizophrenia (73 men [48%] and 79 women [52%]) participated in this study. CAS results were minimal in 51 patients (33.6%), mild in 15 (9.9%), moderate in 19 (12.5%) and severe in 67 (44.1%). Among women, only 26 (32.9%) ranked severe on the CAS, whereas a higher prevalence was detected among men (41 [56.2%]). Most patients were unemployed and had a low educational level, but only male gender was a predeterminant factor of severe anger (p=0.019). **Conclusion:** This study demonstrates that the prevalence of severe anger among individuals with schizophrenia is alarming, and precautionary actions must be taken into consideration to prevent violent actions among these patients in the future. **Keywords:** Schizophrenia, Violence, Anger, Iran

NO. 116

PSYCHOBIOLOGY OF SUICIDAL BEHAVIOR IN COMBAT VETERANS

Lead Author: Leo Sher, M.D.
Co-Author(s): Janine Flory, Ph.D., Linda M. Bierer, M.D., Julia Golier, M.D., Rachel Yehuda, Ph.D.

SUMMARY:
Background: Suicidal behavior is an important problem in returning combat veterans. Efforts at suicide prevention are impeded by the lack of knowledge about the reasons for the increased rate of suicidality and its underlying neurobiological concomitants. The objective of this study was to test the hypothesis that veterans who have made a suicide attempt following deployment can be distinguished from veterans who have never made a suicide attempt based on differences in psychological and biological variables. **Methods:** Thirty-four combat veterans with (n=17) or without (n=17) a history of post-deployment suicide attempts were referred to the study. Following consent, study participants were evaluated diagnostically using the MINI International Neuropsychiatric Interview and with interview- and self-rated questionnaires. Blood samples were obtained for pre- and post-dexamethasone cortisol/adrenocorticotropic hormone (ACTH), neuropeptide Y (NPY), dehydroepiandrosterone (DHEA)/dehydroepiandrosterone sulfate (DHEAS) and brain-derived neurotrophic factor (BDNF). **Results:** Veterans were noted to meet MINI criteria for several *DSM-IV* diagnoses, but these did not differ significantly between suicide attempters and nonattempters. In comparison to nonattempters, veteran suicide attempters showed higher scores on the Suicide Ideation Scale (p=0.019) and higher total scores for the Childhood Trauma Questionnaire (CTQ) (p=0.042) and the CTQ subscale score for emotional abuse (p=0.044). Veteran suicide attempters had lower DHEA (p=0.007) and DHEAS (p=0.031) levels compared to veteran nonattempters, but no differences were observed for glucocorticoid suppression parameters, plasma NPY or BDNF. **Conclusion:** Veterans making post-deployment suicide attempts showed greater childhood emotional abuse and diminished DHEA and DHEAS in comparison to nonattempters. These results are consistent with prior studies indicating greater childhood abuse and lower DHEA/DHEAS in association with suicidality.

NO. 117

POSITIVE PSYCHOLOGICAL CHARACTERISTICS AMONG RECENTLY DISCHARGED PATIENTS: STRATEGY FOR PREVENTION OF REHOSPITALIZATION

Lead Author: Amresh Shrivastava, M.D.
Co-Author(s): Coralee Belmont, Miky Kaushal Avinash DeSouza, Robbie Campbell, Larry Stitt

SUMMARY:
More than 50% of patients with severe mental disorder recover poorly, and about 40% are rehospitalized within six months of discharge despite revolutionary advances in therapeutics. Rehospitalization is a complex phenomenon involving a number of factors that can arise from the patient, the illness, the treatment, or the systems and resources where the patient is being treated. Not much attention has been paid to identifying factors related to the patient and their ability to respond to symptoms and distress that lead to hospitalization. Positive psychological characteristics (PPCs) like resilience and the factors that constitute resilience also play a role in hospitalization. In this cross-sectional cohort study, we examined positive psychological characteristics of resilience and their determinants among those who are repeatedly hospitalized. We measured psychopathology (i.e., psychosis [BP], depression [HDRS], life events [LEQ], suicidality [SISMAP] and resilience [CD-RISC]), and PPCs were measured by individual items of the scale of resilience. 48 of 78 patients were male, mean age was 42.8 and more than 70% were single.38 of 78 patients were hospitalized more than once during the previous year, with the mean number of hospitalizations being 5.4 and length of stay 11.3 weeks in the latest admission. About 56% of subjects had moderate to severe suicidal ideation. Level of resilience was low (71% less than 60 and 37% less than 50).Those who were admitted only once scored high on resilience, suggesting inadequate levels in patients with multiple readmissions, particularly on six parameters: 1) High resilience (28 [51.9%] vs. 4 [19.1%], p<0.010); 2) Took pride in their achievements (18 [58.1%] vs. [31.8%], p<0.024); 3) Had a strong sense of purpose (31 [48.4%] vs. 14 [31.8%], p<0.024); 4) Stayed focused under pressure (28 [50.0%] vs. 4 [21.1%], p<0.028); 5) Did not give up under pressure (25 [53.2%] vs. 7 [25.0%], p<0.017;, and 6) Dealt positively with whatever came up (27 [48.2%] vs. 5 [26.3%]. p<0.095). We suggest the therapeutic measures to build PPC can help reduce rehospitalization.

NO. 118

NEOSENSITIZATION TO MULTIPLE DRUGS FOLLOWING VALPROATE-INDUCED DRESS SYNDROME

Lead Author: Jaemin Song, M.D.
Co-Author(s): Young Eun Jung, M.D., Joon Hyuk Park, M.D., Moon Doo Kim, M.D., Min Seok Cheon, M.D., Chang In Lee, M.D.

SUMMARY:

Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare and potentially life-threatening adverse drug-induced reaction. This syndrome is associated with severe skin eruptions, fever, hematological abnormalities such as eosinophilia or atypical lymphocytes, and multi-organ involvement, especially hepatitis, pneumonitis, nephritis and lymph node enlargement. DRESS syndrome is also known as anticonvulsant hypersensitivity syndrome (AHS) because treatment with aromatic anticonvulsants such as phenytoin, phenobarbital and carbamazepine frequently result in the manifestation of these symptoms. However, DRESS syndrome due to treatment with nonaromatic anticonvulsants, such as valproate, has rarely been reported. Moreover, there are limited data regarding the development of neosensitization related to chemically unrelated drugs following an episode of DRESS syndrome. The precise physiopathology associated with DRESS syndrome remains uncertain, but a proposed multifactorial model has been suggested. The cross-reactivity between anticonvulsant drugs may be explained by chemical or antigenic similarities and has been well described. However, few studies have reported the recurrence of drug hypersensitivity to chemically unrelated drugs in patients with a history of DRESS syndrome. This case report describes a patient who developed secondary neosensitization to amoxicillin, olanzapine and quetiapine after experiencing DRESS syndrome due to valproate treatment. Neosensitization to multiple drugs is rare, particularly after valproate-induced DRESS syndrome, and no such cases have previously been reported in Korea.

NO. 119

CLINICAL SIGNIFICANCE OF RESTLESS LEGS SYNDROME IN PATIENTS WITH LATE-LIFE DEPRESSION

Lead Author: Jaemin Song, M.D.
Co-Author(s): Joon Hyuk Park, M.D., Ji Eon Kang, M.D., Chang In Lee, M.D.

SUMMARY:

Objective: Restless legs syndrome (RLS) is a sleep disorder characterized by uncomfortable and unpleasant sensations in the legs and an urge to move the legs, usually at night. This study investigated the incidence of RLS in patients with late-life depression (LLD) and its influence on various clinical outcomes such as severity of depression, sleep quality, cognitive function and quality of life and, accordingly, to elucidate the clinical significance of RLS in patients with LLD. **Methods:** This study enlisted 170 depressive patients 65 or older from an outpatient clinic. Structured diagnostic interviews were performed using the Korean version of the Mini-International Neuropsychiatric Interview. All patients completed the questionnaires, including the International RLS Severity Scale, the Korean version of the Short-Form 36-Item Health Survey (SF-36), and the Pittsburgh Sleep Quality Index (PSQI). The severity of depression was evaluated by the Korean form of the Geriatric Depression Scale (KGDS), and the level of global cognition was assessed by the Mini-Mental State Examination in the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease Assessment Packet (MMSE-KC). **Results:** The incidence of RLS was 17.6% in LLD patients. RLS was more prevalent among subjects with major depressive disorder (MDD) than those with minor depressive disorder or subsyndromal depressive disorder. The RLS group showed higher score in the KGDS than the non-RLS group, but the difference did not reach statistical significance ($p=0.095$, Student t-test). The mean PSQI score was significantly higher in the RLS group than in the non-RLS group ($p=0.001$, Student t-test). The MMSE-KC score was also lower in the RLS group than in the non-RLS group ($p=0.009$, analysis of covariance), but there was no difference in the score of SF-36 between the RLS group and the non-RLS group. **Conclusion:** RLS is common in LLD patients, especially in patients with MDD, and is associated with poor sleep quality and cognitive dysfunction, indicating that RLS is clinically significant in patients with LLD. Therefore, RLS should be considered an important clinical issue in the management of LLD.

NO. 120

TRENDS IN COMPASSIONATE USE OF INVESTIGATIONAL MEDICINES AND IMPLICATIONS FOR MENTAL HEALTH PROFESSIONALS

Poster Presenter:Allitia DiBernardo, M.D.
Lead Author: Ramana Sonty, Ph.D., M.B.B.S.
Co-Author(s): B. Harrison, A. Ray, H. Manji

SUMMARY:
Compassionate access to investigational medicines has become an area of intense public dialogue driven by the voices of patients seeking treatment options to combat serious illnesses, often when effective approved treatments are lacking or have failed. Underlying this changing landscape are innovative manufacturer pipelines, more informed patients and the power of social media. Increasingly with the help of family, friends and advocates, patients are taking their appeals public via social media campaigns. The legislative and regulatory environment for preapproval access is complex. One principle that stakeholders agree on is prioritization of clinical trials, followed by expanded access programs and compassionate use. This ensures that innovative medicines can gain approval early in the interest of broad public good. Aligned with this principle, stakeholders across the health care landscape are trying to find solutions to lower the barriers to access wherever safe, possible and appropriate. In parallel, other preapproval access efforts are gaining traction as well, such as state right to try lawsÍ¾ their impacts are less certain. At the federal level, language on compassionate use appears in the 21st Century Cures Act, which passed the House. To help patients, the FDA has revamped its website to include a new user-friendly interface, and several pharmaceutical companies have articulated easy-to-understand policies and processes. These efforts are showing results—for instance, the average time required for physicians to fill out a compassionate use request has fallen significantly. These developments foreshadow significant increases in compassionate use request trends already apparent in oncology, immunology and infectious disease areas. Mental health is the next frontier of this movement. The neuroscience paradigm is increasingly shifting to an evidence-based medicine model, and innovative science is bringing forward promising treatment alternatives. Many of these are potentially lifesaving or may significantly affect long-term prognosis in mental illness, e.g., in Alzheimer's disease, depression and schizophrenia. These trends have significant implications for mental health professionals, who are likely to see increasing numbers of patients looking for opportunities to access these investigational medicines. This will require better understanding of the changing regulatory landscape, policies and principles that companies currently follow, as well as the application process they will need to follow to gain access. Consequently, in order for mental health professionals to prepare themselves, it is important that they invest the time and effort necessary to become conversant with the compassionate use paradigm, understand the key issues involved therein and become adept at seeking treatment alternatives for patients in their care who are in dire need of such potentially life-changing alternatives.

NO. 121

A STUDY OF DOG ADOPTION IN VETERANS WITH PTSD

Lead Author: Stephen L. Stern, M.D.
Co-Author(s): Erin P. Finley, Ph.D., M.P.H., Alan L. Peterson, Ph.D., Jim Mintz, Ph.D., Annette Martinez, B.S., Ana Luisa C. Allegretti, Ph.D., Virginia Tovar, B.S., Mistie D. Seawell, Psy.D., Matthew D. Jeffreys, M.D.

SUMMARY:
Background: Despite significant advances in treatment, many veterans continue to suffer from PTSD, suggesting a need for new interventions. In this six-month pilot trial, we studied whether veterans with PTSD randomized to adopt a dog from the local Humane Society as a supplement to usual care would achieve greater reductions in psychological distress over the next three months than those in a wait-list control group. The dogs were pets, not service animals. **Methods:** Veterans met *DSM-5* criteria for current PTSD, scored 39 or more on the PTSD Checklist (PCL-5), and were in active treatment for this disorder. They were free from current substance abuse/dependence, mania, psychosis, or significant suicidal or homicidal ideation and had not lived with a dog or other companion animal for the past 12 months. At the end of their initial evaluation, veterans were randomized to either immediate dog adoption (dog group) or a three-month waitlist prior to adopting a dog (control group). Once a veteran was assigned to adopt a pet, the Humane Society's chief veterinarian selected several dogs for him or her to choose from, excluding any with behavioral or significant medical problems. The adoption, eight sessions of obedience training and veterinary care during the study were provided at no cost to the veteran. Quantitative data were analyzed using mixed effects regression models with repeated measures. **Results:** The nine veterans

in the dog group and 10 in the control group did not differ significantly regarding age, sex, ethnicity or type of traumatic event. Over the three months following randomization, mean (SE) PCL-5 scores improved by 15.2 (3.5) points in the dog group—a clinically significant change—and 7.8 (3.3) points in the control group. The effect size of the group difference (Cohen's d) was medium at 0.7, although p was not significant at 0.141. Mean (SE) scores on the PHQ-9 depression scale improved by 4.1 (1.2) points in the dog group and worsened by 0.7 (1.1) points in the control group, while scores on the UCLA Loneliness Scale improved by 7.8 (3.5) points in the dog group and worsened by 3.4 (3.3) points in the controls. Effect sizes for both scales were very large (1.1 and 1.2, respectively), and p values were significant (0.010 and 0.031). In semi-structured interviews, most veterans in the dog group reported developing close bonds with their pet and becoming more physically and socially active. They also described improvements in their overall happiness, ability to cope with stress and relationships with others. **Conclusion:** Although further research is needed, these initial findings suggest that adopting a pet dog may prove a useful adjunct to treatment for veterans with PTSD.

NO. 122

ALCOHOL USE AND ITS RELATION TO FUTURE TIME PERSPECTIVE AND NEED FOR ACHIEVEMENT IN A SAMPLE OF MEDICAL STUDENTS

Lead Author: Jagannath Subedi, M.D.
Co-Author(s): Mark Lukowitsky, Ph.D., Jeffrey Winseman, M.D., Victoria Balkoski, M.D.

SUMMARY:

Objective: The purpose of this study was twofold: 1) Explore the pattern of alcohol use and misuse among medical students and 2) Explore the relationship between alcohol use, future time perspective and need for achievement in a sample of medical students. **Background:** Substance misuse is common among medical students. Identifying predictors of substance misuse has important implications for intervening and helping students at risk. Studies have shown associations between stronger future time perspective and lower rates of substance abuse in adolescents and young adults. While many aspects of medical training encourage a strong future orientation and reinforce students' internal needs for achievement in order to successfully complete complex tasks, the potential relationships between future time perspective, need for achievement and substance use among medical students have not been explored. **Methods:** Third-year medical students in their psychiatry clerkships at a large northeastern U.S. medical college were invited to participate in a study on factors contributing to medical student well-being. Participants (n=109) completed the Risk Questionnaire (a measure designed to assess patterns of substance use and misuse), the Work Family Orientation Scale (WOFO), which assesses individual differences in need for achievement, and the Future Time Perspective Scale (FTPS), which included two subscales designed to assess both valuation of the future and connectedness to future goals and aspirations. Data analysis included linear regression and Pearson's r. **Results:** All students reported drinking alcohol at least weekly. Over 30% of both males and females reported binge drinking at least monthly, and over 20% of males and females reported binge drinking weekly. A significant interaction between future time perspective, alcohol use and need for achievement was found ($p<0.01$). Students with higher need for achievement and lower scores on the FTPS connectedness subscale reported the highest level of drinking, while students high in both need for achievement and FTPS connectedness reported lower levels of alcohol use. **Conclusion:** Results in this study are consistent with previous research demonstrating higher risk for alcohol misuse in medical students. The importance of identifying internal factors that contribute to and protect against risky drinking patterns among medical students—most notably in students with higher need for achievement who at the same time exhibit weaker cognitive connections between present tasks and future rewards—is supported by the possibility of an underlying interactive relationship between future time perspective, need for achievement and substance use.

NO. 123

ALTERATIONS OF THE CORTISOL AND DEHYDROEPIANDROSTERONE IN PERINATAL DEPRESSION

Poster Presenter:Chan-Hyung Kim, M.D., Ph.D.
Lead Author: Ho-Suk Suh, M.D., Ph.D.
Co-Author(s): Ryun-Sup Ahn, Kang-Soo Lee

SUMMARY:

The purpose of this study is to investigate the alterations of the hypothalamic-pituitary-adrenal (HPA) axis hormones, especially salivary cortisol and dehydroepiandrosterone (DHEA), in perinatal

depression. Forty-four patients with depression and 217 normal subjects in the perinatal period were included in this study. The Edinburgh Postnatal Depression Scale (EPDS) and the Beck Depression Inventory II (BDI-II) were performed. The subjects below 10 points in EPDS score or below 13 points in BDI-II score were classified as normal subjects. Subjects over 11 points in EPDS score or over 14 points in BDI-II score were diagnosed with depression by the *DSM-IV-TR* by psychiatrists. All subjects were to collect their saliva in four collecting tubes immediately upon awakening (IA), 30 minutes after awakening (30A), 60 minutes after awakening (60A) and before bedtime (BB). 103subjects were in the antenatal period , and 21 subjects were antenatal depression (AD) patients and 82 subjects were antenatal normal (AN) . 114 subjects were in the postnatal period , and 23 subjects were postnatal depression(PD) patients and 91 subjects were postnatal normal (PN) . Salivary cortisol levels in subjects with AD collected IA, 30A and 60A were significantly lower than with AN subjects. Salivary cortisol levels in subjects with PD collected 60A only were significantly lower than with PN subjects. Salivary DHEA levels in subjects with both AD and PD were significantly lower than in normal subjects. Also, cortisol/DHEA ratio (F/D ratio) in subjects with both AD and PD was much higher than with normal subjects. These results suggest that the blunted response was shown in AD, and the characteristics between AD and PD are different. Also, the differences in salivary DHEA levels and F/D ratio between subjects with PD and normal subjects are one of the key points of difference among both groups.

NO. 124

RELATION BETWEEN AMYLOID PET DATA AND CLINICAL FACTORS INCLUDING COGNITIVE FUNCTION IN GERIATRIC DEPRESSION: A PILOT STUDY

Poster Presenter:Wan-Seok Seo, M.D., Ph.D.
Lead Author: Hyung-Mo Sung, M.D.
Co-Author(s): Hye-Geum Kim, Bon-Hoon Koo, Eun-Jin Cheon, Seung-Woo Lee, Jae-Wha Choi, Dai-Seg Bai, Dong-Yeop Lee

SUMMARY:

Objective: Previous studies have indicated that geriatric depression(GD) is associated with developing Alzheimer's diseases(AD). Brain β-amyloid burden is one of the most important pathophysiological markers of AD, so we examined brain amyloid accumulation in patients with GD using 18F-labeled amyloid PET. At the same time, we evaluated plenty of factors that might affect developing AD. Finally, the purpose of this study is exploring relationship between brain amyloid deposition and clinical factors including cognitive function in GD. **Methods:** Participants included elderly patients over 60 with major depressive disorder who had subjective cognitive complaints or mild cognitive impairment (MCI) and had not yet been diagnosed with dementia. Thirteen participants received clinical, psychological assessments and 18F-labeled amyloid PET. Assessments included demographic data, psychiatric history, medical history, specific cognitive functions, and depressive and anxiety symptom severity. We quantified the standard uptake value ratio (SUVR) as the degree of amyloid accumulation. Correlation analysis between amyloid accumulation of each brain region and clinical factors including cognitive function was also performed. **Results:** Ten subjects were judged β-amyloid-negative(Aβ-), and three subjects as β-amyloid-positive(Aβ+). Sex, age, BMI, education level, marriage status, smoking or drinking habits, and medical histories were not significantly different between the Aβ- and Aβ+ groups. First-degree family history of AD was significantly more prevalent in the Aβ+ group(p=0.038), and anxious distress specifier, by the *DSM-5*, was significantly more diagnosed in the Aβ+ group(p=0.033), but other psychiatric histories including onset age, episode times, episode duration, admission times, suicide attempt histories, psychotic or atypical features specifier, anxiolytic or hypnotics medication, and depressive or anxiety symptom severity were not significantly different. Immediate memory abilities were correlated negatively with amyloid accumulation in the pars operculum, right hippocampus, basal ganglia (BG), right insula, right amygdala and whole brain. Delayed memory abilities were correlated negatively with amyloid accumulation in the pars operculum, insular cortex, amygdala, BG and right temporal cortex. Such correlations were also observed between visuospatial function and insula and between attention and left precentral and both postcentral gyri and the right parietal cortex, all negatively. Overall score of cognitive test was negatively correlated with amyloid accumulations in left pars operculum. **Conclusion:** In spite of limitations as a pilot study, this study suggested that first-degree family history of AD and anxious distress specifier might relate with developing AD in GD. Memory, attention and visuospatial function were

negatively correlated with amyloid accumulation in certain brain regions.

NO. 125

REDUCED PREFRONTAL CORTEX HEMODYNAMIC RESPONSE IN ADULTS WITH METHAMPHETAMINE-INDUCED PSYCHOSIS

Poster Presenter:Kazuhiko Yamamuro, M.D., Ph.D.
Lead Author: Ryohei Takada, M.D.
Co-Author(s): Junya Ueda, M.D., Hiroki Yoshikawa, M.D., Chieko Aoki, M.D., Yuta Inoue, M.D., Takahiro Azechi, M.D., Shizuka Yamamoto, M.D., Tatsuhiro Furuyama, M.D., Toshifumi Kishimoto, M.D., Ph.D.

SUMMARY:
Patients with methamphetamine (MA) abuse/dependence often exhibit high levels of impulsivity, which may be associated with the structural abnormalities and functional hypoactivity observed in the frontal cortices of these subjects. Methamphetamine-induced psychosis (MAP), which occurs in 10 to 60% of MA abusers, is likely due to repeat administration or the use of high doses of MA. Inhibitory control can be defined as the ability to regulate or inhibit prepotent attentional or behavioral actions. Indeed, neuropsychological examinations have revealed disrupted inhibitory control in patients with MA abuse/dependence, which persists during abstinence from MA. Although near-infrared spectroscopy (NIRS) is a simple and noninvasive method for characterizing the clinical features of various psychiatric illnesses, few studies have used NIRS to directly investigate the association between prefrontal cortical activity and inhibitory control in patients with MAP. Using a 24-channel NIRS system, we compared hemodynamic responses during the Stroop Color-Word Task in 14 patients with MAP and 20 healthy controls matched for age and sex. In addition, we used the Barrett Impulsivity Scale-11 (BIS-11) to assess impulsivity between subject groups. The MAP group exhibited significantly less activation in the anterior and frontopolar prefrontal cortices compared to controls. Moreover, BIS-11 scores were significantly higher in the MAP group and were negatively correlated with the hemodynamic responses in the prefrontal cortex. Our data suggest that reduced hemodynamic responses in the prefrontal cortex might reflect higher levels of impulsivity in patients with MAP, providing new insights into disrupted inhibitory control observed in MAP.

NO. 126

EYES OPEN/CLOSED RESTING STATE EEG SOURCE ANALYSIS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS AND THOSE WITH TYPICAL DEVELOPMENT: A ONE-YEAR FOLLOW-UP

Lead Author: Hidetoshi Takahashi, M.D., Ph.D.
Co-Author(s): Yasunori Aoki, Takayuki Nakahachi, Andrew Stickley, Sahoko Komatsu, Kazuo Ogino, Makoto Ishitobi, Masao Iwase, Ryouhei Ishii, Yoko Kamio

SUMMARY:
Objective: Children with autism spectrum disorder (ASD) are often characterized as having atypicalities ranging from low-level sensory processing to higher-order cognitive functions. ASD has been frequently associated with pathophysiology in cerebral organization, such as atypical patterns of resting eyes-open (EO) or eyes-closed (EC) brain electrical activity (EEG) and their functional connectivity. However, to our knowledge, the neural substrates of atypical resting EO- and EC-state EEG activity and their developmental change in ASD children are not fully understood. The objective of this study was to investigate the neural substrates of such atypical EEG activity and their developmental change in ASD. **Methods:** Subjects were 15 children with ASD (age 124.8±30.1 months) and 31 control children with tardive dyskinesia (TD) (age 144.4±36.3 months). Subjects underwent 64-channel resting EEG testing during EC and EO conditions for two minutes. We analyzed the digital EEG data using exact low-resolution brain electromagnetic tomography (eLORETA) current source density (CSD) and functional connectivity analysis in five frequency bands (delta: 2–4Hz, theta: 4–8Hz, alpha: 8–13 Hz, beta: 13–30Hz, gamma: 30–60Hz). For connectivity analysis, a novel nonlinear connectivity measure termed “lagged phase synchronization” was used. Subjects underwent the EEG testing after a follow-up period of 13.2±2.9 months from baseline. **Results:** In the ASD group, CSD around the right temporoparietal junction (rTPJ) for all frequency bands at EO status were larger compared to the TD group at baseline and significantly reduced after one-year follow-up. A significant reduction of CSD around the occipital area at EO compared to EC status was found for the alpha band in both groups, as well as for the theta band only in ASD children. A significant reduction of alpha band nonlinear lag connectivity across the left and right hemisphere regions, including rTPJ, at EO compared to EC status was only found in the TD group. **Conclusion:** Our results suggest that simple resting EC- and EO-state

EEG data might be effective for investigating atypical development of the rTPJ response, which is often reported in relation to social interaction in ASD. Further investigation of resting EC- and EO-state EEG measures might lead to a promising biomarker for ASD in early life.

NO. 127

AUTHOR- AND STUDY-FUNDING SOURCES AT THE AMERICAN ACADEMY OF ADOLESCENT AND CHILD PSYCHIATRY NEW RESEARCH POSTER SESSIONS

Poster Presenter:Nicole M. Quiterio, M.D.
Lead Author: Thomas P. Tarshis, M.D., M.P.H.
Co-Author(s): Nicole Quiterio, M.D.

SUMMARY:

Background: Over the last decade, awareness regarding the influence of the pharmaceutical industry on the integrity of psychiatric and other research has increased. Troubling data have suggested the possibility that bias affects the design and reporting of industry-funded research in psychiatry. Since new research abstracts are often the first step toward peer-reviewed publication of research into journals, they afford non-researchers a unique opportunity to interact with study authors and ask direct questions regarding pharmaceutical or other industry support of their research. **Methods:** Data were collected from the 59th (2012) and 60th (2013) Scientific Proceedings book from the American Academy of Child and Adolescent Psychiatry (AACAP) annual meetings. Disclosures regarding abstract study funding and author affiliations were extracted. Pearson's chi-square tests were used to test for significant differences in funding sources based on author type (first, last, other or any) both within and between years. P values less than 0.05 were considered significant. **Results:** Data were extracted for 333 abstracts in 2012 and 306 abstracts in 2013. There was no significant change in the number of posters with pharmaceutical support for the study or authors—34.8% (116) in 2012 and 34.6% (106) in 2013 (chi-square=0.003, p=0.96). The abstracts in 2012 reported funding from government (152, 45.6%) or nonprofit (106, 31.8%) sources significantly more than the pharmaceutical industry (39, 11.7%) (chi-square=105.3, p<0.01). However, author disclosures from all categories (first, last, other) significantly favored pharmaceutical sources over government or nonprofit disclosures: first author: 14.1% (47) pharmaceutical, 6.6% (22) nonprofit, 3.3%(11) government (chi-square=27.7, p<0.01); last author: 22.5% (75) pharmaceutical, 6.3% (21) nonprofit, 4.5% (15) government (chi-square=66.4, p<0.01); other author: 18.6% (62) pharmaceutical, 6.9% (23) nonprofit, 3.9% (13) government (chi-square=45.5, p<0.01). In 2013, the same pattern emerged, with 39.9% (122) of the studies being funded by government sources, 20.3% (62) by nonprofit sources and 11.1% (34) by the pharmaceutical industry. Author disclosures again significantly favored pharmaceutical support: first author: 11.1% (34) pharmaceutical, 6.2% (19) nonprofit, 4.9%(15) government (chi-square=9.6, p<0.01); last author: 18.6% (57) pharmaceutical, 6.2% (19) nonprofit, 5.9% (18) government (chi-square=35.1, p<0.01); other author: 18.3% (56) pharmaceutical, 8.2% (25) nonprofit, 9.5% (29) government (chi-square=19.7, p<0.01). **Conclusion:** Despite the fact that study funding from the new research posters is mainly from government or nonprofit sources, author disclosures reveal high levels of pharmaceutical industry support. These findings highlight the importance for all clinicians to be informed regarding funding of research and potential biases of authors that may impact evidence-based practices.

NO. 128

TRANSCRANIAL MAGNETIC STIMULATION TREATMENT OF DEPRESSION USING A 20 HERTZ THETA BURST PULSE PATTERN: A CONSECUTIVE CASE SERIES

Lead Author: William F. Stubbeman, M.D.
Co-Author(s): Victoria Ragland, Raya Khairkhah

SUMMARY:

Background: Transcranial magnetic stimulation (TMS) is a new FDA-approved treatment for depression in which a pulsed magnetic field stimulates cortical neurons. However, similar to pharmacotherapy, two-thirds of patients treated with TMS fail to remit. Theta burst stimulation (TBS) is a type of TMS pulse pattern modeled after neural firing in the hippocampus, which may have improved efficacy, durability and safety. This report reviews the treatment outcomes of a consecutive case series of treatment-refractory depressed patients following TBS 20Hz. **Methods:** Nineteen treatment-refractory outpatients with major depressive disorder (MDD) or bipolar disorder (BD) who failed multiple medication trials and/or electroconvulsive therapy (ECT) were treated in a private practice setting with TBS 20Hz. Individual brain MRI scans were used to probabilistically target Brodmann area 46 in the right (RDLPFC) and left (LDLPFC) dorsolateral prefrontal

cortices. Bilateral TMS was administered five times per week using a MagPro X-100 with mag option and liquid-cooled butterfly B-65 figure eight coil. Each TMS session consisted of 3,600 continuous pulses administered over RDLPFC, immediately followed by 4,950 intermittent pulses administered over LDLPFC. Patients were treated until they remitted or failed to show improvement. Weekly Beck Depression Inventory II (BDI-II) scores assessed outcomes. **Results:** Fifteen of 19 (79%) treatment-refractory MDD or BD patients treated with TBS 20Hz remitted (BDI-II<13). Mean BDI-II scores for remitters dropped by 69%, from 33 to 10, while the average decrease for non-remitters was 22%, from 40 to 31. The combined average BDI-II scores for remitters and non-remitters dropped by 58%, from 35 to 15. Mean time to remission was 5.9±3.7 weeks. **Discussion:** The robust remission rate seen after TBS 20Hz compares favorably with standard antidepressant treatment regimens and suggests TBS 20Hz could be an effective treatment option for patients with MDD or BD. Controlled trials are warranted to confirm these results.

NO. 129

COMPARATIVE EVALUATION OF VORTIOXETINE AS A SWITCH THERAPY IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: Michael E. Thase, M.D.
Co-Author(s): Natalya Danchenko, Ph.D., Mélanie Brignone, Pharm.D., M.S., Ioana Florea, M.D., FranÃ§oise Diamand, M.Sc., Paula L. Jacobsen, M.S., Eduard Vieta, M.D., Ph.D.

SUMMARY:

Background: Guidelines in many countries suggest switching antidepressant therapy if clinically meaningful improvement has not been observed after the initial treatment or if the treatment is not well tolerated. While switching to a different class is generally recommended, the treatment paradigm for switching is not systematically specified due to a lack of systematic and specific evidence on key aspects driving the decision to switch treatment (comparative efficacy and tolerability). **Objective:** Review the characteristics of vortioxetine (including efficacy and tolerability) regarding its relevance for patients with major depressive disorder (MDD) needing to switch treatment. **Methods:** The comparative efficacy and tolerability of vortioxetine in MDD patients switching from an SSRI/SNRI was evaluated in a direct comparative study (NCT01488071) versus the non-SSRI/SNRI agomelatine and in an indirect comparison to sertraline, venlafaxine, bupropion and citalopram from switch studies retrieved in a systematic literature review. The tolerability profile was evaluated in the pooled dataset of the vortioxetine MDD clinical development program. Vortioxetine's impact on treatment-emergent sexual dysfunction (TESD) was assessed in a comparative study versus escitalopram in stable MDD patients switching due to TESD (NCT01364649). **Results:** Vortioxetine has demonstrated safety and effectiveness in MDD patients after a switch due to a lack of efficacy with SSRI or SNRI treatment, with significant benefits over agomelatine of improvement in clinical efficacy measures, work, social and family functioning, quality of life outcomes, and withdrawals due to adverse events (AEs). In the indirect comparison, vortioxetine had a statistically significantly higher remission rate than agomelatine and numerically higher remission rates compared to sertraline, venlafaxine and bupropion. Withdrawal rates due to AEs were statistically significantly lower for vortioxetine than for sertraline, venlafaxine and bupropion. For effectively treated MDD patients with SSRI-induced TESD, switching to vortioxetine was statistically superior to escitalopram with respect to improved sexual functioning. Vortioxetine was generally well tolerated and was effective as maintenance treatment. **Conclusion:** Vortioxetine may be a clinically relevant alternative for patients needing a therapy switch due to a lack of efficacy or experience of tolerability problems with an SSRI/SNRI. Vortioxetine is well tolerated with significant advantages in TESD over escitalopram, which is an important attribute for patients cycling through multiple therapies. Vortioxetine can be an appropriate therapeutic option to incorporate into clinical practice and treatment guidelines.

NO. 130

CLINICAL AND SOCIAL STATUS OF ADULTS WITH POSSIBLE OR PROBABLE SCHIZOPHRENIA UNDERGOING SUBSTANCE ABUSE TREATMENT EVALUATION

Poster Presenter:Megan Jones, Pharm.D., M.P.A.
Lead Author: Kimberlee J. Trudeau, Ph.D.
Co-Author(s): Joanna Burtner, M.P.H., Kruti Joshi, M.P.H., Albert Villapiano, Ed.D., Stephen F. Butler, Ph.D.

SUMMARY:

Objective: Early onset of schizophrenia is often associated with substance use disorders. Our study

compared social, psychiatric and substance use characteristics among possible and probable comorbid schizophrenia relative to no schizophrenia diagnosis (Dx) among adults evaluated for substance use treatment stratified by age group (ages 18–30 and over 31). **Methods:** This cross-sectional analysis of the Addiction Severity Index–Multimedia Version (ASI-MV), a multi-domain substance abuse assessment, collected data at 1,029 sites in 44 states from January 2009 to March 2015. Patients older than 18 were excluded. Participants were classified into three cohorts: 1) Probable Dx, defined as those reporting a schizophrenia diagnosis or more than two of the following: thought disorder diagnosis, psychological hospitalization and hallucination without illicit substance use; 2) Possible Dx, defined as those reporting thought disorder diagnosis or hallucination without illicit substance use; or 3) No Dx, defined as those not Probable or Possible Dx. The No Dx cohort was assigned as the reference cohort. ANOVAs and Chi-square tests examined differences in cohort means and proportions, respectively. Logistic regression estimated odds ratios (OR) and 95% confidence intervals (CI). **Results:** Of the total sample (n=368,365), 59% were Caucasian, 65% were male and 71% had a minimum of a high school education. The sample was further stratified into two age groups: 170,201 (46.2%) were ages 18–30, and 194,200 (52.7%) were over 31. Those with Probable Dx had higher family/social severity ratings in both age groups (18–30: OR=4.31, 95% CI [4.13, 4.49]; over 31: OR=3.39, 95% CI [3.28, 3.49]) relative to No Dx. The Probable Dx cohort was also more likely to report suicidal attempts in the past 30 days in both age groups (18–30: OR=9.91, 95% CI [9.04, 10.86]; over 31: OR=7.85, 95% CI [7.29. 8.46]). In addition, the Probable Dx cohort had more severe psychiatric severity ratings in both age groups (18–30: OR=14.57, 95% CI [13.89, 15.27]; over 31: OR=14.65, 95% CI [14.12, 15.20]). The Probable Dx cohort also had higher drug severity ratings in both age groups (18–30: OR=2.37, 95% CI [2.27, 2.47]; over 31: OR=2.38, 95% CI [2.31, 2.45]) compared to the No Dx cohort. Results for the Possible Dx cohort were similar. **Conclusion:** The Probable and Possible Dx cohorts reported more social, psychiatric and substance use issues than the No Dx cohort in both age groups. Findings suggest that adults undergoing substance abuse evaluations may suffer from early onset of schizophrenia or psychosis symptoms.

NO. 131

PSYCHIATRIC INPATIENT SUICIDE: A NATIONAL REGISTER-BASED STUDY

Lead Author: Mei-Chih M. Tseng, M.D., Ph.D.
Co-Author(s): Chin-Hao Chang, Shih-Cheng Liao, I-Ming Chen

SUMMARY:
Objective: This study assessed the changes over time in suicide rates among psychiatric inpatients during the period of 2002 to 2013 in Taiwan. **Methods:** Inpatient suicide was defined as suicide during admission and within 72 hours of discharge according to the Joint Commission on Accreditation of Health Care Organizations (JCAHO). Suicide cases were 15-year-old and above and selected from merged databases of the National Register of Deaths and other inpatient and outpatient data by means of the unique identified number. For rates of inpatient suicide, we used person year of nationwide psychiatric hospitals and psychiatric inpatient units of general hospitals as the denominator. Rates were estimated by gender, age and method of suicide. Indirect standardization was also used to calculate standardized mortality ratios (SMRs) by gender by dividing observed suicides by expected suicides predicted by the rates in the total population in four age groups (15–24, 25–44, 45–64 and 65+) and gender used as standard population. **Results:** There were 282 cases who were current inpatients at the time of suicide, and 63.8% occurred outside of the hospitals. The inpatient suicide rate fell significantly from 221 to 120 per 100,000 person year (trend test, $p<0.0001$). This fall was observed statistically significant for males and borderline significant for females and was most marked for those aged 45–64. Reductions were seen for the three most common methods (hanging, jumping, drowning), but only jumping reached statistical significance. The SMRs were 4.47 and 9.76 for males and females, respectively. **Conclusion:** Our results show a decreasing trend in inpatient suicide rates despite an increasing trend in length of stay in Taiwan in the same period. Studies of suicides in mental health settings need to continue, and incidence rates may be improved by granting leave conservatively during the hospitalization.

NO. 132

HOARDING PREVALENCE IN USERS OF ONLINE CLASSIFIED ADVERTISEMENTS

Lead Author: Michael Van Ameringen, M.D.
Co-Author(s): Keren Grosman Kaplan, Zahra Kahlesi, Jasmine Turna, William Simpson, Beth Patterson

SUMMARY:
Background: Hoarding disorder (HD) is a mental disorder that has been newly included in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. It is estimated that 2–6% of adults in the general population suffer from clinically significant hoarding symptoms, with 80–90% engaging in excessive acquisition. Little research has examined the excessive acquisition component of HD, although preliminary evidence suggests that buying and obtaining free things are markers of HD severity. Classiï¬ed ad networks on the web provide a way to list items for sale, often for free. Many individuals who suffer from HD have limited insight into their condition and are reluctant to seek help, making prevalence estimates difficult to obtain. We elected to examine the prevalence of hoarding behaviors among users of online classified advertisements. **Methods:** A link to an online survey was posted on the following classified ad sites: Kijiji, Craigslist, Locanto, Reddit and postad.ca. The ads were posted in communities across Canada from June 26, 2015 to November 20, 2015. Following acknowledgment of a disclosure statement, participants were asked to complete a short demographics questionnaire and general questions regarding their use of online classified advertisements; no personal identifiers were collected. The Hoarding Rating Scale (HRS) was then completed; individuals with clinically significant hoarding (based on HRS) also completed the Saving Inventory-Revised(SI-R) and the Clutter Image Rating. Participants were provided with feedback on their hoarding behaviors. Results: At the time of this analysis, 427 had completed the survey. The sample was 66.5% female (n=284), with a mean age of 40.8±13.9; 54% were married, 48 % were single, 10% were divorced and two percent were widowed. Clinically significant hoarding behavior was identified in 12.2% (n=52) using the HRS (xÌ…=24.8±5.9 vs. xÌ…=9.8±7.0 in those without significant hoarding, p<0.0001). Individuals with significant hoarding reported visiting more non-online sources of used or free items, such as garage sales: xÌ…=2.6±1.5 sources vs. xÌ…=2.0±1.6 sources (p=0.03). No significant differences were found between hoarders and nonhoarders in the amount of time spent visiting online advertising sites, with approximately 30% of both groups reporting spending 20 or more hours per month visiting these sites. The hoarding group (n=52) also had scores indicating significant hoarding on the SI-R (xÌ…=52.0±13.0), but not on the Clutter Image Rating. **Discussion:** This sample of individuals visiting online classified ad sites had high rates of clinically significant hoarding behaviors—double that found in the general population. The amount of time spent on online classified sites did not appear to be associated with hoarding. Online classified ad sites may represent a unique medium to study individuals with hoarding behaviors.

NO. 133

A PILOT STUDY EVALUATING THE GUT MICROBIOME IN OBSESSIVE-COMPULSIVE DISORDER VERSUS HEALTHY CONTROLS

Lead Author: Michael Van Ameringen, M.D.
Co-Author(s): Jasmine Turna, Keren Grosman Kaplan, Rebecca Anglin, Beth Patterson, Michael Surette

SUMMARY:
Background: The human gut is home to numerous bacteria, where the gut bacteria outnumber human cells tenfold. It has been suggested that these bacteria, collectively known as “the human gut microbiome,” play a role in modulating the bidirectional communication that exists between the brain and the gut. Animal studies have suggested that manipulation of the gut microbiome can alter mood and anxiety-like behavior, leading to the possibility that the gut microbiome may play a role in the pathophysiology of psychiatric conditions. Moreover, probiotic administration has been shown to normalize anxiety and mood behaviors in animal models and healthy humans. Similar findings have also been reported in obsessive-compulsive disorder (OCD), a condition characterized with recurrent intrusive thoughts (obsessions) and repetitive behaviors (compulsions), causing significant interference in daily life. In this study, we investigate the gut microbiome in patients with OCD (primary diagnosis) as compared to healthy controls—individuals who do not meet criteria for current anxiety or mood problems. To our knowledge, this is the first study to analyze the gut microbiome in OCD. **Methods:** Ten untreated OCD patients and 13 controls were recruited from the community. An assessment visit was conducted confirming presence of OCD and other comorbid conditions (MINI International Neuropsychiatric Interview). Enrolled OCD participants required a Yale-Brown Obsessive-Compulsive Scale (YBOCS) score≥20; current depression was excluded. All completed the Obsessive-Compulsive Inventory-Revised (OCI-R), Depression Anxiety Stress Scale-21 (DASS-21) and Dutch-Dimensional Obsessive-Compulsive Scale

(DDOCS), and a stool sample was collected for analysis. Microbiome composition analysis will be conducted using culture-independent method, DNA will be extracted using an in-house protocol and bacterial composition will be determined by amplification of the V3 region from 16S rRNA gene and MiSeq Illumina sequencing. **Results:** In the OCD group, 58% were female, with a mean age of 27.13±4.67 years, similar to controls (50% female; mean age 32.67±12.94 years). The mean YBOCS (25.50±3.81) characterized a severe OCD sample, while the control group presented a significantly lower mean YBOCS (1.83±3.15). The OCD group scored higher on all symptom severity measures: OCI-R (27.14±9.72); DASS (depression [7±5.83 vs. 0.33±0.71], anxiety [5.67±6.38 vs. 0.13±0.35], stress [9.17±6.71 vs. 1.11±1.96]); DDOCS (17.85±5.73). Results of the microbiome analysis will be available. **Conclusion:** The results of this study will comment on a novel mechanism in the pathogenesis of OCD, and findings may point to a promising direction whereby intestinal bacteria could be targeted for their therapeutic potential.

NO. 134

MULTIPLE-RATER ASSESSMENT OF PERSONALITY DISORDERS IN A SAMPLE OF SUBSTANCE-ABUSING WOMEN

Lead Author: Adriana Vannucci, M.D.
Co-Author(s): Mark Lukowitsky, Melissa Falb, Jill Clemence, Victoria Balkoski,

SUMMARY:

Self-report ratings of personality and personality pathology provides important information about individuals, but many not provide a complete picture. Indeed, a reliance on self-reported information may be problematic, as it only provides a single perspective and thus may yield incomplete or biased information about individuals. This is perhaps particularly important for the assessment of personality pathology, as limited self-awareness or defensiveness may affect responses to self-report questionnaires. Increasing evidence now supports recommendations to supplement self-report measures with informant ratings of adult psychopathology for both clinical assessment and research purposes. However, it is also important to note that informants, including clinicians, may have their own biases that may affect an individual's assessment. As such, a multiple perspective approach that relies on multiple raters utilizing different assessment tools may provide a more comprehensive understanding of personality pathology. Therefore, the aim of this study was to assess the degree of consistency in ratings of personality pathology as assessed by different raters using different assessment methods. Participants in the study included 34 women enrolled in a year-long residential drug and alcohol rehabilitation treatment program and concurrently presenting for treatment at an outpatient community psychiatric center for a variety of symptom-related disorders and personality pathology. Patients completed the Personality Inventory for *DSM-5* (PID-5) to assess pathological traits from a self-rating perspective. We also had the clinicians of these patients complete the Shedler-Westen Assessment Procedure (SWAP-200) after meeting with the patient for a minimum of six individual psychotherapy sessions. The SWAP-200 differs from other personality and personality disorder instruments in that it was designed for use by clinically experienced informants using a Q-factor analysis of the patient's personality. Finally, an independent clinician interviewed each patient using the Structured Interview for *DSM-IV-TR* Personality Disorders (SCID-2), a semi-structured interview for making *DSM-IV* Axis II diagnoses. The results of this study suggested that both self and informants provided results consistent with personality pathology diagnoses. In addition, several results suggested significant consistency and reliability across the raters, as well as some important discrepancies. As an example, while SWAP-200-rated narcissism did not predict a diagnosis of narcissistic personality disorder on the SCID-2, it was associated with high antagonism self-ratings on the PID-5. Overall, our results support calls for a multimethod and multiple informant approach to the assessment of personality pathology.

NO. 135

DOMESTIC SQUALOR: A COMMUNITY MENTAL HEALTH ISSUE

Lead Author: Cenk Varlik, M.D.
Co-Author(s): Dilek Sarikaya Varlik, M.D., Mehtap Arslan Delice, M.D.

SUMMARY:

Objective: For all cultures and socioeconomic statuses above a certain degree, neglected, dirty and unkempt homes are defined as domestic squalor. With rapidly developing community mental health services over the last four years in Turkey, we determine these domestic squalor cases and undertake the treatment of people living in these

houses. In this study, we analyzed sociodemographic and clinical characteristics of domestic squalor cases as determined by BakÄ±rköy Community Mental Health Center in the past two years. **Methods:** All files had been scanned regarding cases registered to the BakÄ±rköy Community Mental Health Center in the past two years. We identified 18 domestic squalor cases. They have been researched in terms of sociodemographic and clinical characteristics. **Results:** Data analyses were performed using SPSS/PC version 20.0. 66.7% of patients were male; 22.2% were married, 66.7% were single, and 11.1% were divorced or widowed. 44.2% had high school or higher education. Only one patient (5.6%) had a regular job. 66.7% of patients had a diagnosis of schizophrenia. In addition, 11.1% carried a diagnosis of nonorganic psychotic disorder; 16.7% were diagnosed with bipolar disorder, and only one patient (5.6%) was diagnosed with delusional disorder. **Conclusion:** According to the results of our study, the majority of patients were over 50 years old, male and single. Almost half of the patients had a high school or higher education level. Almost all were not working or retired. It is remarkable that the majority of patients were living with their families, and almost one-third earned more than $500 per month.

NO. 136

INCLUSION OF AN EXPERT PATIENT AS CO-COORDINATOR IN PSYCHOEDUCATION WORKSHOPS FOR FAMILY MEMBERS OF BIPOLAR PATIENTS: AN INNOVATIVE MODEL

Lead Author: Carlos Vinacour, M.D.
Co-Author(s): Graciela Rodríguez Méndez, Sandra Salvador. Psicóloga, Cecilia Rodríguez, M.D., Inés Bernhard. Psicóloga, IAldo Sacerdoti, Constanza Cilley, Luis Herbst, M.D.

SUMMARY:
Background: The so-called “caregiver burden” (CB) is a variable that measures the impact of a chronic disease on the people who are close to the patient. There are multiple studies that account for the impact produced by bipolar disorder on patients’ relatives, whether they live under the same roof or not, and how this impact affects the evolution of the patients’ symptoms. Reducing the burden on relatives helps to improve the patients’ symptoms. Most psychoeducational models are coordinated by professionals of a health care team. In this study, we evaluated the impact of a psychoeducational model for relatives consisting of ten meetings, which differs from traditional models since it is co-coordinated by an “expert patient” with the auxiliary of a psychiatrist and a psychologist with experience in psychodynamic groups. **Methods:** We evaluated 95 relatives during the workshops carried out between 2008 and 2013. In every workshop, a demographic interview was conducted, and the 22-item Zarit Scale (Cronbach’s α=0.87) in Spanish was applied; a baseline was taken at the beginning of the workshop, another at the end, and the last telephone follow-up was performed after three months. SPSS was employed to perform the statistical analysis. **Results:** This sample showed that 82% of patients had an overall decrease in levels of the quantitative CB. At the beginning of the workshop, relatives with burden represented 75% of the studied population; 21% of the relatives evidenced mild CB and 54% evidenced severe CB. At the end of the workshop (ten weeks), the percentage of relatives with CB decreased to 68%, 16% showing mild CB and 52% showing severe CB. The relatives with no burden increased from 25 to 33%. Greater persistence of the effectiveness of the workshop was proven in the evolution of severe CB A significant decrease in the level of severe CB (from 54 to 37%) and a significant increase of caregivers without burden (from 25 to 37%) should be highlighted in the follow-up conducted three months later. Also, a decrease should be noted in severity averages of subjective and objective CB at 12 weeks and at three months in relatives living with patients. In relatives not living with patients, objective CB decreased at the end of the workshop, but increased at 12 weeks; subjective CB increased at the end of the workshop and decreased to baseline values at 12 weeks. **Conclusion:** In our sample, a workshop for relatives of bipolar patients co-coordinated by a health care team and an “expert patient” proved to be effective in reducing the burden of relatives living with the patients, both quantitatively and in terms of objective and subjective burden. An increase in subjective burden was shown in those relatives not living with patients. Future studies should examine this point.

NO. 137

A REGISTER-BASED CASE-CONTROL STUDY OF PRESCRIPTION MEDICATION UTILIZATION IN BINGE EATING DISORDER

Poster Presenter:Barry K. Herman, M.D.
Lead Author: Hunna J. Watson, Ph.D.
Co-Author(s): Andreas Jangmo, M.Sc., Melissa A. Munn-Chernoff, Ph.D., Laura M. Thornton, Ph.D.,

Elisabeth Welch, Ph.D., Camilla Wiklund, M.Sc., Yvonne von Hausswolff-Juhlin, M.D., Ph.D., Claes Norring, Ph.D., Henrik Larsson, Ph.D., Cynthia M. Bulik, Ph.D.

SUMMARY:

Background: Individuals with binge eating disorder (BED) commonly present with psychiatric and medical comorbidities and obesity. The nature and magnitude of prescription medication utilization in BED is unclear because the disorder has only recently been codified in the *DSM-5*. **Methods:** This study was a Swedish register-based case-control study. Cases were individuals diagnosed with BED at specialist eating disorder clinics between 2006 and 2009 (n=238, 96% female, mean age=22.8). For each case, 10 controls were matched on sex and year, month and county of birth (n=2,380). The association between BED and prescription medication utilization was investigated prior to and within 12 months after the index date (defined as the date of diagnosis of the BED case). The role of lifetime psychiatric comorbidity and obesity in explaining any observed elevations in prescription medication utilization was examined. **Results:** Prior to the index date, cases were significantly more likely than controls to have been prescribed medications for nervous system (odds ratio [OR]=6.4; 95% confidence interval [CI]: 4.7, 8.6), tumor and immune disorder (OR=3.5; 95% CI: 1.3, 9.3), cardiovascular (OR=2.2; 95% CI: 1.4, 3.5), digestion and metabolism (OR=2.1; 95% CI: 1.5, 2.9), infectious disease (OR=1.9; 95% CI: 1.4, 2.6), skin (OR=1.8; 95% CI: 1.3, 2.5), and respiratory system (OR=1.3; 95% CI: 1.0, 1.8) problems. Cases also had higher odds of prescription medication utilization than controls across the majority of categories within 12 months after the index date. Several associations remained after accounting for lifetime psychiatric comorbidity. Utilization of psychiatric and nonpsychiatric medications within 12 months of the index date was elevated in individuals with BED both with and without comorbid obesity when compared to controls. Compared to cases without comorbid obesity, those with comorbid obesity were significantly more likely to be prescribed anxiolytics (OR=2.5; 95% CI: 1.2, 5.3) and skin agents (OR=2.3; 95% CI: 1.0, 5.1) within 12 months after diagnosis. **Conclusion:** Prescription medication utilization for psychiatric and nonpsychiatric conditions among individuals with BED is elevated above control rates both before and after diagnosis. The results confirm previous findings regarding the psychiatric and somatic comorbidity burden of BED and have implications for service planning. The findings demonstrate the need to incorporate medical management into clinical mental health care.

NO. 138

RANDOMIZED, DOUBLE-BLIND STUDY OF THE TIME-COURSE OF EFFECT OF MLR METHYLPHENIDATE IN ADHD ADULTS IN A SIMULATED ADULT WORKPLACE ENVIRONMENT

Lead Author: Sharon B. Wigal, Ph.D.
Co-Author(s): Tim Wigal, Ph.D., Ann Childress, M.D., Graeme Donnelly, M.Sc., Joseph Reiz, B.Sc.

SUMMARY:

This randomized, double-blind, crossover, placebo-controlled, optimized-dose study assessed clinical efficacy, time of onset, time course of efficacy and safety over 16 hours of a multilayer release (MLR) methylphenidate formulation compared to placebo in ADHD adults in an adult workplace environment (AWE). A total of 59 subjects 18 to 60 years old with a *DSM-5* diagnosis of ADHD were enrolled, and 46 successfully completed the study. Once-daily open-label MLR was titrated weekly from 25mg/day until optimal clinical response (maximum 100mg/day). Optimal dose was maintained until one week prior to the first AWE day, when subjects were randomized to blinded active medication or placebo. Following the first AWE day, subjects received the alternative treatment for one week, leading up to and including the second AWE day. The primary endpoint was the mean between-treatment Permanent Product Measure of Performance Total (PERMP-T) score (a timed math test evaluating effortful performance) across the AWE laboratory day. Time of onset of efficacy was defined as the earliest time point when the difference on the PERMP-T between active and placebo became statistically significant. Efficacy offset was defined as the latest time point when the difference on the PERMP-T between active and placebo was statistically significant. When subjects were treated with MLR, performance improved compared to when they received placebo, as measured by the mean change from pre-dose PERMP-T score across the AWE laboratory day (MLR: 51.5±29.22; placebo: 23.9±31.27; $p<0.0001$). Improvement was observed within one hour ($p<0.0001$) of receiving MLR compared to placebo and continued for 16 hours ($p<0.0001$). Independent observers noted a decrease in ADHD-like behavior, as measured by the mean change from pre-dose Swanson, Kotkin, Agler, Mylnn

and Pelham-Combined (SKAMP-C) score across the AWE laboratory day (PRC-063: −3.5±3.99; placebo: 0.1±4.41; p<0.0001). Improvements were observed within one hour of receiving MLR (p=0.0013) and continued for 16 hours (p<0.0001). Fewer symptoms of ADHD were observed on MLR versus placebo (ADHD-5-RS total score: MLR, 16.8±9.95; placebo, 30.6±11.76; p<0.0001). Self-rated ADHD symptoms significantly improved with receiving MLR compared to placebo (Conners' Adult ADHD Rating Scale ADHD Index, p=0.0038). 84.1% of the subjects were rated by the clinician as "much improved" or "very much improved" on the Clinical Global Impressions scale when they received MLR versus 22.3% when they received placebo (p=0.0001). Eleven adverse events occurred in over 10% subjects receiving MLR: decreased appetite, decreased weight, dry mouth, fatigue, headache, insomnia, initial insomnia, middle insomnia, irritability, nausea and upper respiratory tract infection. **Conclusion:** MLR was safe and effective in the treatment of adults with ADHD. Improvements in performance and ADHD symptoms occurred within one hour of dosing and continued throughout the day for 16 hours.

NO. 139
WITHDRAWN

NO. 140
DIFFERENTIAL PATTERNS OF BLOOD OXYGENATION IN THE PREFRONTAL CORTEX BETWEEN PATIENTS WITH METHAMPHETAMINE-INDUCED PSYCHOSIS AND SCHIZOPHRENIA

Lead Author: Kazuhiko Yamamuro, M.D., Ph.D.
Co-Author(s): Junya Ueda, M.D., Ryohei Takada, M.D., Hiroki Yoshikawa, M.D., Chieko Aoki, M.D., Yuta Inoue, M.D., Takahiro Azechi, M.D., Shizuka Yamamoto, M.D., Tatsuhiro Furuyama, M.D., Toshifumi Kishimoto, M.D., Ph.D.

SUMMARY:
Despite some slight differences in symptomatology, differential diagnosis of methamphetamine-induced psychosis (MAP) versus schizophrenia can be challenging because both disorders present a large overlap in their clinical symptoms. However, a recent study has shown that near-infrared spectroscopy (NIRS) performed during a cognitive task can be a powerful tool to differentiate between these two disorders. In this study, we evaluated verbal fluency task performance during NIRS in 15 patients diagnosed with MAP and 21 with schizophrenia matched for age and sex. We used prefrontal probes and a 24-channel NIRS machine to measure the relative concentrations of oxyhemoglobin every 0.1 seconds during the task. For each patient, the neurocognitive function and clinical psychopathology were evaluated using the Positive and Negative Symptom Scale (PANSS) and the Brief Assessment of Cognition in Schizophrenia (BACS). Oxyhemoglobin changes in the prefrontal cortex were significantly higher in the MAP group compared to those in the schizophrenia group, particularly in the right dorsolateral prefrontal cortex. In contrast, we found no significant difference in PANSS and BACS scores. Our findings suggest that NIRS measurement could be applied to differentiate patients with MAP from those with schizophrenia, even in cases where clinical symptoms are similar.

NO. 141
HYPERPIGMENTATION AND BIZARRE DELUSIONS: A CASE REPORT

Lead Author: Alan C. Yancovitch, M.D.
Co-Author(s): Jennifer M. Erickson, D.O., Simona Goschin, M.D., Kenneth Ashley, M.D., Seema Quraishi, M.D., Joel Wallack, M.D., Daniel Safin, M.D.

SUMMARY:
Background: Hyperpigmentation is a common, usually harmless condition in which patches of skin become darker in color than the normal surrounding skin. Causative etiology is primarily cutaneous, but can also be rheumatological, endocrinological or oncological in origin. There are also psychiatric causes of hyperpigmentation that can result from excessive scratching without an underlying skin condition. We present a case of hyperpigmentation and known psychiatric symptoms leading to exacerbation of scratching in the context of simultaneous medical conditions likely to be associated with this patient's hyperpigmentation. We will discuss the consideration of these overlapping conditions, leading to the manifestation of scratching and hyperpigmentation. **Case:** A 56-year-old African-American female with extensive past medical history including metabolic syndrome, stroke and multiple myocardial infarctions who presented with failure-to-thrive, throat and left-sided jaw pain and tightness, and bilateral hand and foot pain described as burning and worsening over time. Due to throat pain and tightness, the patient reported difficulty swallowing solid food over the past several months. The patient reported that solid food was getting "jammed" in her throat, although

she denied odynophagia. The patient endorsed a decreased appetite and a diet consisting mainly of soups and liquids. She reported a chronic/severe alcohol use disorder, feeling depressed for the past 1.5 years and intermittent auditory hallucinations concerning her deceased son's voice. She was found on examination to have distinct deficits consistent with an unspecified neurocognitive disorder and noted that, due to worsening "tightness of face, body and hair," she felt the need to compulsively rub/scratch her mandible and neck because "it loosens the skin, which is attached to the center; it's all connected." This repetitive scratching was thought to be a contributing factor to the worsening hyperpigmentation. **Discussion:** We reviewed the literature on hyperpigmentation from both the medical and psychiatric perspectives and discussed the broad differential diagnosis that must be considered. The case report aids in focusing the discussion on the overlap of psychiatric illnesses, which can contribute to scratching and subsequent hyperpigmentation. A brief discussion of the role of psychosomatic medicine in helping the primary team manage the case will be included.

NO. 142

PREDICTORS OF FEAR OF FALLING AMONG COMMUNITY-LIVING ELDERLY PEOPLE IN KOREA: MEDIATION EFFECT OF DEPRESSION AND SUBJECTIVE HEALTH STATUS

Poster Presenter:Jong-Il Park, M.D., Ph.D.
Lead Author: Jong-Chul Yang, M.D., Ph.D.
Co-Author(s): Tae Won Park, M.D., Ph.D., Sang-Keun Chung, M.D., Ph.D., Lee Jeunghoon, M.D., Ph.D.

SUMMARY:
Objective: Investigate the risk factors of fear of falling in a representative sample of the elderly population in Korea. **Methods:** We examined the dataset of the Survey of Living Conditions and Welfare Needs of Korean Older Persons, which was conducted by the Korea Institute for Health and Social Affairs (KIHASA) in 2011. Participants (n=10,674) were randomly selected from the elderly over 65 years old. Multivariate logistic regression was used to investigate risk factor of fear of fall in terms of their sociodemographic- and health-related variables. **Results:** This study shows that 21.2% of the participants experienced a fall during the past 12 months. 32.4% and 43.3% of the participants reported severe and mild fear of fall, respectively. In hierarchical regression analyses, we revealed that, along with fall, depression, subjective health status, chronic illness and functional impairment were significant predictors of fear of fall after controlling for various confounding variables. In addition, mediational analyses suggested by Baron and Kenny (1986) revealed that both depression and subjective health status were partial mediators of the relationship between fall and fear of fall. **Conclusion:** Persons with fear of falling were more depressed and perceived their health status as poorer when compared to persons without fear of falling. Health care providers should be alert to evaluate and provide optimum treatment of underlying depression and poor subjective health status in elderly people.

NO. 143

THERAPEUTIC DOSE OF VENLAFAXINE ER INDUCED SEIZURE: A CASE REPORT

Lead Author: Chuanzhong Ye, M.D., Ph.D.
Co-Author(s): Megan Ninneman, Judd Scott Christian, Fanglin Zhang, Dominique Musselman

SUMMARY:
Background: Venlafaxine is a selective serotonin and norepinephrine reuptake inhibitor (SSNRI) commonly used for the treatment of depression. Although listed as an adverse reaction, seizure activity associated with a therapeutic dose of venlafaxine is rarely documented. A review of the literature reveals only two cases of venlafaxine-induced seizures, both of which were generalized tonic-clonic seizures in patients on doses at the higher end of the therapeutic range. We report the development of seizure activity in a 44-year-old female after the initiation of therapy with venlafaxine extended-release (ER) with a therapeutic dose. Seizure activity subsequently resolved after down titrating the venlafaxine and initiating anticonvulsant pharmacotherapy. The possible pharmacokinetic nuances are discussed. **Objective:** This poster reports a case of seizure after a therapeutic dose of venlafaxine. **Case:** This case of seizure activity occurred in a 44-year-old female after she ingested a low therapeutic dose of venlafaxine, which developed following the titration of venlafaxine ER from 37.5mg to 75mg daily. Nine complex partial seizures were witnessed. After we down titrated venlafaxine ER to 37.5mg daily and started anticonvulsant therapy, she exhibited no further seizures. **Conclusion:** Health care prescribers should consider the development of seizure activity under therapeutic dosing of venlafaxine. Furthermore, the potential for drug interactions

needs to be recognized, especially in combination with multiple drugs such as isoniazid and levofloxacin.

NO. 144

DESCRIPTIVE EPIDEMIOLOGY OF DISABILITY ATTRIBUTABLE TO BEHAVIORAL SYNDROMES ASSOCIATED WITH PHYSIOLOGICAL DISTURBANCES AND PHYSICAL FACTORS IN CHINA

Lead Author: Tingting Zhang
Co-Author(s): Yueqin Huang

SUMMARY:

Objective: Provide information for developing a health strategy of prevention and rehabilitation of disability attributable to behavioral syndromes associated with physiological disturbances and physical factors. The disability prevalence and its distribution were described, and the disability grades and their severity of functional impairment were analyzed. **Methods:** Using a descriptive epidemiological method, the data of the Second National Sampling Survey on Disability in 2006 were analyzed. The disability prevalence of behavioral syndromes associated with physiological disturbances and physical factors and their distribution in different people and regions were statistically calculated. **Results:** The total number of the respondents was 2,526,145. The disability prevalence rate of behavioral syndromes associated with physiological disturbances and physical factors was 2.3/100,000. The prevalence rate in females was 2.46 times higher than that in males (p=0.002). The prevalence rate in the unemployed was 2.21 times higher than that in the employed (p=0.003). Compared to people with a low education level, people with higher education levels had statistically lower prevalence rates (rates of high school or above, middle school, and elementary school or below were 9.8/100,000, 29.3/100,000 and 61.0/100,000, respectively, p=0.011). The distribution of the prevalence rates in different marital status had no statistical significance (p=0.115).The prevalence rates varied in 31 provinces with statistical significance (p<0.001).The rate in Guangdong was the highest. Among disabilities attributable to behavioral syndromes associated with physiological disturbances and physical factors, the group of mild psychiatric disability was the majority, accounting for 68%. Among the behavioral syndromes leading to disability, impairment in physical movement and ability of self-care was relatively mild, while impairment in abilities of understanding and communication, interpersonal relationships, daily activity, and social participation were more severe. **Conclusion:** The distribution of behavioral syndromes associated with disability varies in population and region. Further study is warranted for disabilities with different impairments to daily and social activities.

NO. 145

THE *DSM-5* ANXIOUS DISTRESS SPECIFIER INTERVIEW: RELIABILITY AND VALIDITY

Lead Author: Mark Zimmerman, M.D.
Co-Author(s): Lia Rosenstein, B.A., Emily Walsh, B.A., Douglas Gazarian, B.A., Heather Clark, B.A.

SUMMARY:

Objective: Over the past 20 years, the clinical significance of coexisting anxiety disorders and anxiety symptoms in depressed patients has been increasingly recognized. Prevalence is high, and co-occurring anxiety has been associated with increased suicidality, greater impairment in functioning, worse health-related quality of life, poorer longitudinal course, greater number of depressive episodes and poorer response to treatment. To acknowledge the clinical significance of anxious features in depressed patients, the *DSM-5* included criteria for an anxious distress specifier for major depressive disorder. In this report from the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project, we describe the development, reliability and validity of the *DSM-5* Anxious Distress Specifier Interview (DADSI). **Methods:** The DADSI is a brief, clinician-administered interview that assesses the *DSM-5* anxious distress criteria in both a dichotomous and continuous fashion. Thus, the DADSI determines if a depressed patient meets the *DSM-5* subtype and quantifies the severity of the anxious distress specifier features and thus can be used to monitor outcome. Depressed patients were interviewed with the Structured Clinical Interview for *DSM* Disorders (SCID), DADSI, Hamilton Depression Rating Scale (HAMD) and Hamilton Anxiety Rating Scale (HAMA). The patients also completed self-report measures of anxiety, depression, psychosocial functioning and quality of life. **Results:** The inter-rater reliability of the *DSM-5* anxious distress subtyping and DADSI total scores was high. Likewise, the internal consistency of the DADSI was high and all item-scale correlations were significant. DADSI scores were more highly correlated with the HAMD than the HAMA and more

highly correlated with self-report measures of anxiety than depression and anger. Depressed patients with anxiety disorder diagnoses had significantly higher DADSI scores than depressed patients without an anxiety disorder. Patients who met the anxious distress specifier reported more impairment in psychosocial functioning and poorer quality of life than patients who did not meet the anxious distress specifier. **Conclusion:** The results of this study indicate that the DADSI is a reliable and valid measure of the *DSM-5* anxious distress specifier. The DADSI can be used to both evaluate the presence or absence of the specifier, as well as quantify the severity of symptoms of the specifier.

NO. 146

A CLINICALLY USEFUL SCREEN FOR BORDERLINE PERSONALITY DISORDER IN PSYCHIATRIC OUTPATIENTS

Lead Author: Mark Zimmerman, M.D.
Co-Author(s): Matthew D. Multach, B.A., Kristy Dalrymple, Ph.D., Iwona Chelminiski, Ph.D.

SUMMARY:

Objective: Borderline personality disorder (BPD) is a serious illness that is frequently underdiagnosed. The goal of this report from the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project was to determine if it was possible to identify one or two BPD criteria that could serve as "gate" criteria to screen for the disorder. We hypothesized that affective instability, considered by some theorists to be of central importance to the clinical manifestations of BPD, could function as such a gate criterion to screen for the disorder. **Methods:** 3,674 psychiatric outpatients were evaluated with a semi-structured diagnostic interview for *DSM-IV* BPD. We computed the sensitivity, specificity, and positive and negative predictive values of each of the nine BPD criteria to identify the one or two criteria that could be used to screen for the disorder. We conducted a validation and cross-validation analysis by splitting the sample in half. **Results:** In both the validation and cross-validation samples, the affective instability criterion had a sensitivity greater than 90%, higher than the sensitivities of the other eight BPD criteria. The negative predictive value of the affective instability criterion was 99%. **Conclusion:** We recommend that clinicians screen for BPD in the same way that they screen for other psychiatric disorders—by inquiring about a single feature of the disorder (i.e., affective instability), the presence of which captures most patients with the disorder and the absence of which rules out the disorder.

NO. 147

ITI-007 FOR THE TREATMENT OF SCHIZOPHRENIA: PRIMARY AND SECONDARY EFFICACY ENDPOINTS AND SUBGROUP ANALYSES FROM TWO POSITIVE RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED CLINICAL TRIALS

Poster Presenter:Robert E. Davis, Ph.D.
Lead Author: Cedric O'Gorman, M.D.
Co-Author(s): Robert Davis, Kimberly Vanover, Jelena Saillard, Michal Weingart, Sharon Mates

SUMMARY:

Background: ITI-007 is a first-in-class novel investigational agent in clinical development for the treatment of schizophrenia. Acting synergistically through serotonergic, dopaminergic and glutamatergic systems, ITI-007 represents a new mechanistic approach to the treatment of schizophrenia and other neuropsychiatric disorders. ITI-007 is a potent antagonist at 5-HT2A receptors, a mesolimbic/mesocortical dopamine phosphoprotein modulator with activity as a presynaptic partial agonist and postsynaptic antagonist at dopamine D2 receptors, a mesolimbic glutamate GluN2B receptor phosphoprotein modulator, and a serotonin reuptake inhibitor. ITI-007 60mg was shown to be effective in reducing symptoms of schizophrenia in a phase 2 clinical trial (ITI-007-005) with a safety and tolerability profile similar to placebo. Subsequently, a phase 3 clinical trial (ITI-007-301) was conducted to evaluate the efficacy and safety of ITI-007 for the treatment of schizophrenia and again found 60mg to be effective, safe and well tolerated. **Methods:** In the phase 2 trial (ITI-007-005), patients with an acutely exacerbated episode of schizophrenia were randomized to receive one of four oral treatments once daily for four weeks: ITI-007 60mg, ITI-007 120mg, risperidone 4mg (positive control) or placebo in a 1:1:1:1 ratio. In the phase 3 trial (ITI-007-301), patients with an acutely exacerbated episode of schizophrenia were randomized to receive one of three oral treatments once daily for four weeks: ITI-007 60mg, ITI-007 40mg or placebo in a 1:1:1 ratio. The primary endpoint was change from baseline on the Positive and Negative Syndrome Scale (PANSS) total score at day 28 compared to placebo. The key secondary endpoint was the Clinical Global Impression Scale for Severity of Illness (CGI-S). Additional secondary endpoint analyses, as well as analyses of patient subgroups,

were conducted and will be presented. **Results:** In phase 2, ITI-007 60mg met the primary endpoint and demonstrated efficacy with statistically significant superiority over placebo at day 28 as measured by the PANSS total score. Similarly, in phase 3, ITI-007 60mg also met the primary endpoint and demonstrated efficacy with statistically significant superiority over placebo at day 28 as measured by the PANSS total score. Moreover, ITI-007 60mg showed significant efficacy as early as week 1 on both the PANSS total score and PANSS positive symptom subscale score, which was maintained at every time point throughout the entire study. ITI-007 60mg also met the key secondary endpoint of statistically significant improvement on the CGI-S. Consistent with previous studies, ITI-007 was safe and well tolerated. Additional analyses from both studies on secondary endpoints and patient subgroups will be presented.

NO. 148

ITI-007 FOR THE TREATMENT OF SCHIZOPHRENIA: SAFETY AND TOLERABILITY DATA TO DATE FROM TWO DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED CLINICAL TRIALS

Poster Presenter:Sharon Mates, Ph.D.
Lead Author: Cedric O'Gorman, M.D.
Co-Author(s): Kimberly Vanover, Robert Davis, Jelena Saillard, Michal Weingart, Sharon Mates

SUMMARY:

Background: ITI-007 is a first-in-class novel investigational agent in clinical development for the treatment of schizophrenia. Acting synergistically through serotonergic, dopaminergic and glutamatergic systems, ITI-007 represents a new mechanistic approach to the treatment of schizophrenia and other neuropsychiatric disorders. ITI-007 is a potent 5-HT2A antagonist, a mesolimbic/mesocortical dopamine phosphoprotein modulator with activity as a presynaptic partial agonist and postsynaptic antagonist at dopamine D2 receptors, a mesolimbic glutamate GluN2B receptor phosphoprotein modulator, and a serotonin reuptake inhibitor. ITI-007 60mg was shown to be effective in reducing symptoms of schizophrenia in a phase 2 clinical trial (ITI-007-005) with a safety and tolerability profile similar to placebo. Subsequently, a phase 3 clinical trial (ITI-007-301) was conducted to evaluate the efficacy and safety of ITI-007 for the treatment of schizophrenia, and ITI-007 was again found to be effective, safe and well tolerated, with a favorable metabolic, motoric and cardiovascular profile. Combined safety/tolerability results will be presented. A companion poster (P6-146) describes the efficacy data to date with ITI-007 in schizophrenia. **Methods:** In the phase 2 trial, patients with an acutely exacerbated episode of schizophrenia were randomized to receive one of four oral treatments once daily for four weeks: ITI-007 60mg, ITI-007 120mg, risperidone 4mg (positive control) or placebo in a 1:1:1:1 ratio. In the phase 3 trial, patients with an acutely exacerbated episode of schizophrenia were randomized to receive one of three oral treatments once daily for four weeks: ITI-007 60mg, ITI-007 40mg or placebo in a 1:1:1 ratio. The primary endpoint was change from baseline on the Positive and Negative Syndrome Scale (PANSS) total score at day 28 compared to placebo. In this poster, clinically important data concerning tolerability are presented, demonstrating placebo-like outcomes after ITI-007 administration on safety endpoints, including EPS, clinical laboratory values, adverse events, vital signs, cardiovascular function and metabolic parameters including changes in weight, glucose and insulin, lipids, and prolactin. **Results:** In phase 2, ITI-007 60mg met the primary endpoint and demonstrated efficacy with statistically significant superiority over placebo at day 28 as measured by the PANSS total score. In phase 3, ITI-007 60mg also met the primary endpoint and demonstrated efficacy with statistically significant superiority over placebo at day 28 as measured by the PANSS total score. Consistent across both studies and prior studies, ITI-007 was safe and well tolerated, as evidenced by a motoric, metabolic and cardiovascular profile similar to placebo and no clinically significant changes in akathisia, extrapyramidal symptoms, prolactin, body glucose, insulin and lipids. Combined assessment and evaluation of ITI-007 safety and tolerability data will be presented.

NO. 149

PRESCRIPTION DRUG MONITORING PROGRAMS: DOES THE ARIZONA CSPMP PROVIDE MORE INFORMATION THAN ROUTINELY COLLECTED IN AN INPATIENT PSYCHIATRIC FACILITY?

Lead Author: Shabnam Sood, M.D.
Co-Author(s): Alicia Cowdrey, M.D., Brooke Willows, Gilbert Ramos, M.S., Bikash Bhattarai, Ph.D., Napatkamon Ayutyanont, Ph.D.

SUMMARY:

Prescription drug abuse is the leading cause of accidental death in the United States, and

prescription drug monitoring programs (PDMPs) have been implemented as tools to help identify potential misuse, diversion or excessive prescribing. Most states mandate PDMPs to help health care professionals identify patients potentially abusing medications and to decrease accidental death from prescription drug abuse. Arizona legislated the institution of its controlled prescription monitoring program (CSPMP) in 2007, with a database available starting in 2008. Physician attitudes toward the monitoring tools vary, and their use is not consistent. Clinicians who are overloaded with work find the use of CSPMPs cumbersome and intrusive. In an inpatient psychiatric setting, psychiatrists routinely obtain results of urine drug screens (UDSs) and document endorsed substance use, including prescription medications, in a psychiatric admission interview. Little is known about how useful accessing CSPMPs can be when a complete clinical evaluation is done along with a UDS. This study recorded history of substance use as reported in psychiatric admission interviews and from the UDS, then compared these with reports from the CSPMP. The aim was to determine if the current methods of obtaining substance use information are sufficient or can be enhanced, particularly by incorporating routine review of CSPMP in an inpatient setting. A prospective chart review was completed on all 220 patients newly admitted to the behavioral health units at Maricopa Integrated Health System within a 30-day period. CSPMP records were also checked for these patients. 127 of these patients were diagnosed with substance use disorder. Of these, 125 (56.8%) were identified as substance abusers from history and UDS, and only two (0.8%) were identified exclusively by checking the CSPMP. The tests results were not normally distributed, so nonparametric tests were chosen for analyses. Patients who were identified as substance users compared to those who were not based on CSPMP had a higher number of positive readings on UDS, number of prescriptions, number of prescribers and number of pharmacies. Compared to those who were not, patients who were identified as substance users based on chart review are younger and have a higher number of positive readings on the UDS panel. The results demonstrate that accessing the CSPMP provided little benefit to improving substance abuse detection when combined with the clinical interview and UDS results in an inpatient psychiatric hospital setting.

NO. 150

CANNABIS AND SYNTHETIC CANNABINOIDS' (K2) ASSOCIATION WITH PSYCHOSIS COMPARED TO OTHER SUBSTANCES

Lead Author: Anahita Bassirnia, M.D.
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SUMMARY:
INTRODUCTION: Psychosis has a well-known association with substance use. Among different substances, the relationship between cannabis and psychosis has been consistently reported, while it is not well defined for other substances. In this study, we investigated the relationship between psychosis and various substances, including alcohol, cannabis, synthetic cannabinoids, cocaine, opiates, benzodiazepines, amphetamines and PCP. **Methods:** Data were extracted from digital charts of all patients admitted to a dual diagnosis psychiatric unit between March 2014 and March 2015. Basic demographic factors, current substance use (self-report and laboratory results), psychotic symptoms, diagnosis of psychotic disorders and treatment with antipsychotic medications were among the extracted variables. **Results:** A total of 676 charts were reviewed. Mean age was 40.92 (SD=12.82), and 72.9% of participants were male. Alcohol was the most common substance (50.2%), followed by cannabis (38.5%) and cocaine (23.8%). Among the substances, synthetic cannabinoids had a strong significant association with psychotic symptoms (OR=3.98, 95% CI [2.36, 6.69]) and diagnosis of any nonaffective psychotic disorders (OR=5.55, 95% CI [3.18, 9.69]), followed by cannabis (OR=2.21, 95% CI [1.61, 3.04] and OR=1.79, 95% CI [1.30, 2.45], respectively). These associations remained significant when controlled for basic demographic factors and use of other substances. No other substances had any significant positive association with psychosis. In contrast to the cannabinoids showing greater psychosis risk, the relationship between psychotic symptoms and diagnosis of nonaffective psychotic disorders were significantly negative with alcohol (OR=0.51, 95% CI [0.37, 0.69] and OR=0.63, 95% CI [0.47, 0.86], respectively), cocaine (OR=0.46, 95% CI [0.32, 0.67] and OR=0.63, 95% CI [0.43, 0.90], respectively), opiates (OR=0.42, 95% CI [0.22, 0.82]) and benzodiazepines (OR=0.32, 95% CI [0.17, 0.60] and OR=18.6%, 95% CI [0.12, 0.47], respectively). **Conclusion:** Cannabis and synthetic cannabinoids were the only substances with significant positive associations with psychosis in our inpatient population. Cannabinoid use

appears to enhance the risk for protracted psychosis outcome as compared to other drugs of abuse.

NO. 151

METABOLIC AND INFLAMMATORY PARAMETERS OF CLINICAL HIGH RISK (CHR) FOR DEVELOPING PSYCHOSIS AND HEALTHY CONTROL SUBJECTS: A CASE CONTROL STUDY

Lead Author: Isabel Ribeiro Caldas Domingues, M.D.
Co-Author(s): Kristin Cadenhead, M.D.

SUMMARY:

Background: Schizophrenia is a major psychiatric disorder, with increased mortality mainly due to cardiovascular causes at least partially due to a high prevalence of metabolic disorders (diabetes, dyslipidemia, obesity, hypertension) in the psychotic population. Inflammation levels (such as CRP) have been strongly correlated to cardiovascular risk and, more recently, with a number of mental disorders, from depression to psychosis. There have been studies showing that individuals in the first episode of psychosis, even when medication naïve, already have abnormalities in metabolic as well as inflammatory parameters. **Objective:** Collect metabolic and inflammatory parameters in a group of individuals identified as being at clinical high risk (CHR) for developing psychosis and compare the results with healthy control subjects matched by age and gender. This will be the first study comparing metabolic and inflammatory profiles in CHR subjects with healthy controls matched for age and gender. **Methods:** Subjects include 30 CHR individuals from the UCSD Cognitive Assessment and Risk Evaluation (CARE) program and 30 healthy controls matched by age and gender. Assessments include metabolic and inflammatory parameters (abdominal circumference [AC], body mass index [BMI], blood pressure, fasting glucose and insulin, lipid profile, CRP and IL6) in addition to symptoms, functioning, diet and exercise habits, smoking status, family history of cardiovascular disease, and medication status. **Results:** A preliminary analysis of 30 CHR subjects and eight normal controls showed that there were no differences in sex distribution or age between the groups. There were significant differences in BMI ($p<0.04$) and near significant differences in AC ($p=0.06$) and fasting glucose ($p=0.08$), with the CHR individuals having higher BMI (26.6 vs. 23.0), higher AC (91.5 vs. 76.5) and higher fasting glucose (87.9 vs. 84.0) relative to controls. Data on all 30 controls relative to the CHR group will be reported at the meeting. **Conclusion:** Preliminary findings suggest that CHR individuals have higher rates of obesity compared to age-matched controls. If we find significant differences in terms of metabolic parameters and inflammatory markers in the CHR individuals, that would point toward a predisposition to metabolic disturbances and inflammation pathway deregulation early on in the disease process. These data can be used in the future to help establish more effective and specific preventive strategies to reduce the major impact of metabolic and cardiovascular diseases later in life for the population with psychosis. **Keywords:** Clinical High Risk, High Risk, Prodrome, Inflammation, Schizophrenia, Metabolic

NO. 152

MINDFULNESS-BASED COGNITIVE THERAPY VERSUS PSYCHOEDUCATION IN BIPOLAR OUTPATIENTS WITH SUBTHRESHOLD DEPRESSIVE SYMPTOMS: PRELIMINARY RESULTS

Poster Presenter:Guillermo Lahera, M.D., Ph.D.
Lead Author: Consuelo De Dios, M.D., Ph.D.
Co-Author(s): Carmen Bayón, M.D., Ph.D., Marifé Bravo, M.D., Ph.D., Beatriz Rodríguez-Vega, M.D., Ph.D., Caridad Avedillo, M.D., Rosa Villanueva, M.D., Sara Barbeito, Ph.D., Margarita Sáenz, M.D., Ph.D., Adriana García-Alocén, Ph.D., Amaia Ugarte, Ph.D., Ana González-Pinto, M.D., Ph.D., Gonzalo González, Ph.D., Laura Carballeira, Ph.D., Alberto Flores, M.D., Mauricio Vaughan, M.D., Nuria García-Barbacil, Ph.D., Pablo Pérez, M.D., Paula Barga, Ph.D., Guillermo Lahera, M.D., Ph.D.

SUMMARY:

Background: The presence of depressive subsyndromal symptoms (SS) in bipolar disorder (BD) increases the risk of affective relapse and worsens social functioning, cognitive functioning, and quality of life. Nonetheless, there are limited data on how to optimize the treatment of subthreshold depressive symptoms in BD. Mindfulness-based cognitive therapy (MBCT) is a psychotherapeutic intervention that has been shown to be effective in unipolar depression. The assessment of its clinical effectiveness in bipolar disorder patients with subsyndromal depressive symptoms and psychopharmacological treatment is needed. Objective: Compare the effectiveness of the addition of MBCT intervention versus a brief structured group psychoeducation to the standard treatment of SS in BD. Our hypothesis was that MBCT is more effective in reducing the subsyndromal depressive symptoms to a higher

degree than psychoeducation and the treatment as usual (TAU). **Methods:** A randomized, multicenter, prospective versus active comparator, evaluator-blinded clinical trial was conducted. Forty patients with BD and subclinical or mild depressive symptoms were randomly allocated to 1) MBCT added to psychopharmacological treatment (n=16); 2) A brief structured group psychoeducational intervention added to psychopharmacological treatment (n=17); or 3) Standard clinical management, including psychopharmacological treatment (n=7). Assessments were conducted at screening, baseline, post-intervention (eight weeks) and four-month follow-up milestones. **Results:** The primary outcome (Hamilton Rating Scale for Depression (HAM-D) score) at baseline indicated that groups had a similar level of depressive symptoms: MBCT 11,8 (3,3); psychoeducation 11,4 (3,2); TAU 12,7 (3,4). Between baseline and post-test, HAM-D scores decreased markedly in the three groups: MBCT 7,1 (3,3); psychoeducation 8,2 (5,1); TAU 9,4 (4,1). Between post-test and follow-up, little change took place in the HAM-D score of any group: MBCT 6,9 (6); psychoeducation 7,3 (5,1); TAU 9,2 (4,1). Overall, no significant differences were found between the three groups in HAM-D score. Young Mania Rating Scale score did not significantly change in the three visits. HAM-A score (anxiety symptoms) improved between baseline and second visit and baseline and third visit, but did not vary between the second and third visits. No significant differences were observed among the three treatment groups in HAM-A score. **Conclusion:** These preliminary findings suggest that the addition of MBCT or psychoeducation does not provide additional benefits to TAU to improve subsyndromal bipolar depression.

NO. 153

EMOTION RECOGNITION AFTER THE PSYCHOTIC STATE: A LONGITUDINAL STUDY

Lead Author: Guillermo Lahera, M.D., Ph.D.
Co-Author(s): Ana González-Barroso, Alicia Ruiz-Toca, Beatriz Martínez, Marta García

SUMMARY:

Background: Patients with chronic schizophrenia are characterized by deficits in identifying facial expressions of emotion, and these deficits relate to impaired social and occupational function. Results from studies on first psychotic episodes suggest that emotion identification impairment represents a trait susceptibility marker, rather than a sequelae of illness. However, these disturbances could also be state-dependent (partially explained by thought and behavior disorganization, acute symptomatology, or acute cognitive impairment) and may vary after the psychotic episode. **Objective:** Analyze the longitudinal course of facial emotion recognition in patients with acute psychosis. **Methods:** Twenty-four patients with active psychotic episode (due to different conditions such as schizophrenia relapse, schizophreniform disorder, brief psychotic disorder, schizoaffective disorder or non-specified disorder, following *DSM-5*) were recruited from two hospitals in Madrid. These patients were assessed a second time, between six months and a year later, in a stable phase of the illness, without any specific training to improve performance in the test used. In both assessments, patients were also evaluated in cognitive function through the SCIP test. They were also asked to answer to 20 images of the Emotion Recognition Task (ER40), noting which emotion they thought the person in the picture was expressing (happiness, sadness, fear, anger or no emotion). Finally, these two measures of the same sample in emotion recognition were compared with the performance of a similar sample of 46 healthy controls. **Results:** Patients made fewer mistakes in the stable phase (z=−2.875; p=0.004) compared to the acute phase. Patients in the acute phase recognized especially worse expressions of anger (z=−3.035; p=0.002) and fear (z=−2.326; p=0.020) compared to the answers of the same sample in the stable phase. Patients in the acute phase also committed more false positive answers on happiness (z=−2,147; p=0,032) and sadness expressions (z=−2,312; p=0,021). In comparison with the control group, differences were shown only in the acute phase, but not in the stable one. **Conclusion:** Our results suggest that some disturbances in face emotion recognition are dependent of the psychotic state, and they improve after clinical remission.

NO. 154

AGE AT ONSET IN PATIENTS WITH BIPOLAR I AND II DISORDERS: A COMPARISON OF LARGE-SAMPLE STUDIES

Poster Presenter:Bernardo Dell'Osso, M.D.
Lead Author: Laura Angela Cremaschi, M.D.
Co-Author(s): Benedetta Grancini, Matteo Maggi, Matteo Vismara, Francesca De Cagna, Mattia Molle, Shefali Miller, Terence A. Ketter, A. Carlo Altamura

SUMMARY:

Background: Bipolar disorder (BD) is a leading cause of disability worldwide, and factors contributing to

its burden include chronic relapsing course, comorbidity, suicide risk and early age at onset (AAO). In particular, recent investigation has shown that BD onset may occur earlier than previously believed, even though if BDI and BDII are different in such regard is still debated. Limited samples may, moreover, limit confidence in the available literature with geographic issues, in turn, representing potentially conditioning factors. The present review, therefore, selected and analyzed large sample studies comparing AAO in BDI versus BDII patients. **Methods:** A multistep computerized literature search was performed on PubMed, considering articles written in English and published up to September 2015 that compared AAO in BDI versus BDII patients with a sample size greater than 100 subjects per group. **Results:** Seventeen studies were considered suitable for revision, with eight studies reporting statistically significant differences and nine not reporting any difference. Among studies reporting statistically significant differences, six showed an earlier AAO in BDI, while two showed an earlier AAO in BDII subjects. **Conclusion:** Most large sample studies comparing AAO in BDI versus BDII patients did not report any statistically significant difference, while among reports showing statistically significant differences, there is a preponderance of BD I versus BDII patients having an earlier AAO. Our findings seem to suggest that AAO per se may not reliably contribute to differentiate BDI from BDII patients and that such a variable should likely be associated with other clinical characteristics in order to assess its overall influence over the course of the disease.

NO. 155

SHORTER TIME TO DEPRESSIVE RECURRENCE IN BIPOLAR II VERSUS BIPOLAR I DISORDERS

Lead Author: Bernardo Dell'Osso, M.D.

Co-Author(s): Saloni Shah, Laura D. Yuen, Farnaz Hooshmand, Shefali Miller, Po W. Wang, Terence A. Ketter

SUMMARY:

Objective: Assess bipolar disorder (BD) subtype effects on rates of and times to recovery from acute depression and depressive recurrence in BD patients. **Methods:** Stanford BD Clinic outpatients enrolled from 2000 to 2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and monitored longitudinally for two years with the STEP-BD Clinical Monitoring Form while receiving naturalistic treatment. Prevalence and clinical correlates of bipolar subtype in depressed and recovered (euthymic for eight weeks or more) BD patients were assessed. Kaplan Meier survival analyses assessed times to recovery from depression and depressive recurrence in patients with bipolar II disorder (BDII) versus bipolar I disorder (BDI), and Cox Proportional Hazard regression analyses assessed covariate effects. This study was limited to an American tertiary BD clinic referral sample. **Results:** BDII as compared to BDI was more common among 153 currently depressed (62.1% vs. 37.9%, p=0.006) and less common among 105 currently recovered (39.0% vs. 61.0%, p=0.03) patients, with BDII more common in depressed versus recovered patients (p<0.001). Among depressed patients, BDII as compared to BDI had more childhood BD onset (31.6% vs. 8.6%, p<0.01), 10 or more mood episode accumulation (77.3% vs. 44.8%, p≤0.05), no current psychotropic use (25.3% vs. 8.6%, p<0.05), less prior psychosis (17.9% vs. 63.8%, p<0.0001), prior psychiatric hospitalization (7.4% vs. 58.6%, p<0.0001), current mood stabilizer use (51.6% vs. 75.4%, p<0.01), current antipsychotic use (20.0% vs. 56.9%, p<0.0001), similar recovery rate (20.0% vs. 12.3%, p=0.74) and time to recovery from depression. Among recovered patients, BD II as compared to BDI had more lifetime anxiety disorder (61.0% vs. 37.5%, p<0.05) and current antidepressant use (46.3% vs. 25.0%, p<0.05), less prior psychosis (12.2% vs. 68.8%, p<0.0001) and prior psychiatric hospitalization (9.8% vs. 70.8%, p<0.0001), and higher depressive recurrence rate (52.6% vs. 23.7%, p=0.005) and shorter time to depressive recurrence (log-rank p=0.02), with the latter becoming nonsignificant controlling for lifetime anxiety disorder (HR=3.9, p=0.002), prior psychosis (HR=0.3, p=0.03) and prior year rapid cycling (HR=2.9, p=0.02). **Conclusion:** Among recovered patients, BD II as compared to BDI had more lifetime anxiety disorder and current antidepressant use and less prior psychosis and prior psychiatric hospitalization, as well as shorter time to depressive recurrence (potentially driven by lifetime anxiety disorder and prior year rapid cycling, attenuated by prior psychosis), whereas among depressed patients, BD II as compared to BDI had more childhood BD onset, 10 or more mood episode accumulation and a lack of psychotropic use, but less prior psychosis, prior hospitalization, current antipsychotic use, current mood stabilizer use and a similar time to recovery from depression.

YOUNG INVESTIGATORS' NEW RESEARCH 2

MAY 17, 2016

NO. 1

CHILDHOOD TRAUMA PREDICTS CLUSTER B PERSONALITY PATHOLOGY

Lead Author: Victoria Fink, M.D.
Co-Author(s): Thachell Tanis, Firouz Ardalan, Kahlen Kim, Laura DeRubeis, Igor Galynker, M.D., Ph.D., Lisa Cohen, Ph.D.

SUMMARY:

Background: Childhood trauma is known to be associated with multiple psychiatric disorders in adulthood, including mood, substance use, personality and even psychotic disorders. In the interest of optimizing prevention and treatment strategies, it is important to identify which of these adult disorders are most closely associated with a history of childhood maltreatment. We hypothesized that early life abuse and neglect will best predict personality disorders rather than mood and psychotic disorders. **Methods:** Our sample included 156 subjects recruited from the inpatient psychiatric units at Mount Sinai Beth Israel in New York City. The subjects were diagnosed using the Structured Clinical Interview for *DSM-IV* Disorders (Axis I and II). Level of childhood maltreatment was assessed with the Childhood Trauma Questionnaire (CTQ). Using bivariate logistic regression analyses, we compared subjects who met criteria for at least one Cluster A, B or C personality disorder, as well as people who met criteria for schizophrenia, schizoaffective disorder, bipolar disorder, major depressive disorder and other (substance-induced mood disorder) to see if they were more likely to score above the median on a total childhood trauma score than patients not meeting criteria for these diagnoses. Finally, a multivariate logistic regression analysis was run in which the association of all diagnoses to childhood trauma was assessed, covaried for the effect of all other comorbid diagnoses. **Results:** In bivariate analyses, only people who met criteria for a Cluster A (OR=2.39, p=0.012) or Cluster B personality disorder (OR=3.64, p=0.001) were significantly more likely to score above the median for total childhood trauma history. In the multivariate logistic regression analysis, only Cluster B diagnoses (AOR=3.63, p=0.002) predicted a history of childhood trauma. **Discussion:** Our results suggest that maltreatment experienced early in life is most closely associated with Cluster B personality pathology development later in life as compared to mood or psychotic disorders, supporting the privileged role of early maladaptive environment in personality disorders. This may be an important component in both diagnostic considerations and choice of therapeutic approach.

NO. 2

INTRA-MUSCULAR OLANZAPINE FOR AGITATION AND AGGRESSION IN SCHIZOPHRENIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Lead Author: Vishesh Agarwal, M.D.
Co-Author(s): Subani Maheshwari, M.D., Kimberly Nordstrom, M.D., Bruce Goldman, L.C.S.W., Andrew Chen, M.D., Ph.D.

SUMMARY:

Background: Patients with schizophrenia can present with acute onset agitation and/or violent behavior, which may require rapid and effective treatment. Available antipsychotic choices are limited and used alone or in combination with variable efficacy. Intramuscular (IM) olanzapine monotherapy has been shown to be effective and safe across several randomized controlled trials (RCTs). **Objective:** Investigate the efficacy and safety of IM olanzapine for rapid and effective treatment of agitation in schizophrenia. **Methods:** Data from RCTs comparing IM olanzapine versus placebo or other treatments were meta-analyzed using standard meta-analytic procedures as used by Cochrane Collaboration. Relative risk (RR) and Hedge's g were calculated for dichotomous data and continuous data, respectively, as effect size measures, each with 95% confidence intervals (CIs) and with number needed to treat (NNT) and standardized/weighted mean difference (SMD/WMD) as appropriate. The primary outcome of interest was change in the Positive and Negative Syndrome Scale Excited Component (PANSS-EC). Secondary outcomes included additional agitation behavior and psychopathology scores and adverse events. **Results:** Four RCTs (n=721) were identified and included in the analysis. Significant reduction in PANSS-EC was seen across all treatment doses and groups compared to placebo (SMD=−0.99, 95% CI [−1.25, −0.73], p<0.00001; WMD=−5.05, 95% CI [−6.28, −3.83], p<0.0001). PANSS-EC symptom reduction was comparable to IM haloperidol (7.5mg) at all IM olanzapine doses (p=0.23). Higher olanzapine doses (≥5mg) were more effective than olanzapine 2.5mg (N=1, n=230, SMD=−0.66, 95% CI [−0.90, −0.42], p<0.00001; WMD=−3.25, 95% CI [−4.39, −2.12,

p<0.00001). Additionally, significant reduction in Brief Psychiatric Rating Scale total score was observed with IM olanzapine treatment compared to placebo (p=0.002). Side effect occurrences did not differ statistically, although haloperidol was associated with more treatment-emergent adverse events, with some leading to study discontinuation. Intramuscular olanzapine was comparable to haloperidol in treating agitation, but had more rapid onset and lower risk of extrapyramidal symptoms (EPS). **Conclusion:** Intramuscular olanzapine≥5mg, preferably 7.5 or 10mg, is effective in reducing agitation, comparable to haloperidol 7.5mg. It reduces excited component symptoms in agitated patients with acute schizophrenia. Some limitations to our review were the limited number of trials and all of them being industry supported. Further, the results may not be generalized to real-world settings due to the difficult consent process and controlled nature of the included trials.

NO. 3

OLFACTORY PROCESSING ABILITY AND RISKY DECISION MAKING IN HIV PATIENTS

Lead Author: Mohammed W. Ahmed, M.D.
Co-Author(s): Christopher Jackson, B.S., Narayan Rai, M.B.B.S., Charlee K. McLean, M.S., Maria Mananita S. Hipolito, M.D., Flora Terrell Hamilton, D.S.W., L.I.C.S.W., Suad Kapetanovic, M.D., Evaristus A. Nwulia, M.D., M.H.S.

SUMMARY:
Objective: Given neuroimaging evidence for overlap in the circuitries for decision making and olfactory cognition, we examined the hypothesis that impairment in psychophysical tasks of olfaction would independently predict risky decisions on Iowa Gambling Task (IGT), a laboratory task that closely mimics real-life decision making, in a U.S. cohort of HIV-infected (HIV+) individuals. **Methods:** In a Washington, DC-based cohort of largely African-American HIV+ subjects (n=100), we administered neuropsychological measures and olfactory tasks; normative data were derived from demographically matched non-HIV subjects (n=43) from a different study. Constructs of olfactory ability and risky decision making were examined through confirmatory factor analysis (CFA). Structural equation models (SEMs) were used to evaluate the validity of the path relationship between latent traits of olfactory cognition and decision making. **Results:** The 100 HIV+ participants (56% female, 96% African Americans, median age=48) had a median CD4 count of 576 cells/µl, and the median HIV RNA viral load less than 48 copies per milliliter. Reduced olfactory task performance was more strongly associated with lower performance on IGT than working memory and planning tasks. SEMs provided statistical validity for overlap in olfactory processing and learning during the course of the IGT. Factor scores of olfactory cognition and IGT performance strongly predicted six months' history of intravenous drug use, while olfaction additionally predicted hallucinogen use. **Conclusion:** This study suggests that a simple, inexpensive, office-based task of olfaction can identify those HIV+ individuals who are prone to risky decision making. If confirmed by future studies, this finding may have significant clinical, public health and research implications.

NO. 4

NIH TOOLBOX FLUID COGNITION COMPOSITE SCORES ARE ASSOCIATED WITH IL-1Î' AND IL-10 IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Osarhiemen Ruth Aimienwanu, M.B.B.S.
Co-Author(s): Ruchir Arvind Patel, Sumana Goddu, Titilayo Makanjuola, Ramandeep S. Kahlon, Satyajit Mohite, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:
Background: Patients with schizophrenia have diminished cognitive abilities. The NIH Toolbox (NIH-TB) Fluid Cognition composite score (derived from the Flanker, Dimensional Change Card Sort, Picture Sequence Memory, List Sorting and Pattern Comparison Tests) assesses fluid cognitive functioning, and higher scores indicate a higher level of cognitive functioning. Schizophrenia is associated with elevated levels of plasma cytokines, and these cytokines have also been associated with cognitive function in patients. However, the association of the NIH-TB Fluid Cognition composite score with plasma cytokines has not been evaluated. This pilot study evaluated the correlation of the NIH-TB Fluid Cognition composite scores with plasma cytokines in a sample of patients with schizophrenia. **Methods:** The NIH Toolbox Cognitive Test Battery was administered on 10 patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) a few hours after fasting blood was drawn for measurement of plasma cytokines (interferon gamma [IFN-Î³], interleukin 1 beta [IL-1β], interleukin 6 [IL-6], interleukin 10 [IL-10] and tumor necrosis factor

alpha [TNF-α]) using ELISA. Spearman rank correlations between NIH-TB Fluid Cognition composite scores and plasma cytokines were calculated. **Results:** NIH-TB Fluid Cognition Composite scores were negatively correlated with IL-1β (ρ=−0.705, p=0.034) and IL-10 (ρ=−0.673, p=0.047), but not with the other cytokines. **Conclusion:** These preliminary results are consistent with findings in previous studies that have found a negative correlation between plasma cytokines and cognition in patients with schizophrenia. If replicated in larger prospective studies, IL-1β and IL-10 could become biomarkers of cognitive function in patients with schizophrenia.

NO. 5

SOCIODEMOGRAPHIC VARIABLES AND CONCURRENT SUBSTANCE USE ARE NOT PREDICTORS OF SYNTHETIC CANNABIS USE

Lead Author: Mohammed A. Azam, M.D.
Co-Author(s): Partam Manalai, M.D., Ayan Ghairatmal, M.D., Matie Trewe, M.D.

SUMMARY:

Background: Illicit substance use is quite prevalent in the African-American population of the Washington, DC, area. In recent years, the use of so-called synthetic cannabinoids has been increasingly prevalent in this population. However, there have been few studies on the characteristics of patients using these so-called synthetic drugs. **Methods:** In this chart review, thus far, we have analyzed the data of 130 patients randomly selected from the pool of patients treated on an acute inpatient psychiatric unit. **Results:** The results showed that there were 112 African Americans in the study, 10 white and eight from other races; 118 were unemployed; 12 were discharged against medical advice; three were committed involuntarily; and average length of stay was 3.73 days (SD=1.8). There were no differences in the following characteristics: length of stay (3.7 vs. 4.1, p=0.3), age (43.4 vs. 40.3, p=0.3), concurrent other substance use (Fish exact test p<0.3) or alcohol use (p=1). There was no difference based on gender, either (Fisher exact test p=1). There was no significant difference in other substance use between patients endorsing use of synthetic illicit substances and nonusers of synthetic illicit substances (p=0.2068). **Discussion:** Even though the use of so-called synthetic cannabis is reportedly high, in our patient population, only about 10% reported recent or current use of these drugs. There was no statistically significant finding on any of the sociodemographic variables that we examined that would predict use of these synthetic drugs compared to more conventional illicit substances and alcohol. It is quite likely that a substantial number of patients had not reported use of these newer illicit substances, which is not objectively assessed by urine toxicology screen. Including a measure (e.g., short questionnaire) in the initial assessment of patients admitted to emergency rooms and psychiatric units may yield better results representing the scope of the problem in this vulnerable population.

NO. 6

TELECOURT VERSUS TRADITIONAL COURT FOR INVOLUNTARY CIVIL COMMITMENTS

Lead Author: Sailaja Bysani, M.D.
Co-Author(s): Elder Chad, Tahir Rahman

SUMMARY:

Objective: Survey a sample of attending psychiatrists in the state of Missouri regarding the use of videoconferencing (telecourt) for civil commitment hearings. **Methods:** A survey questionnaire of 11 questions was constructed by our research team. We sampled a cohort of attending psychiatrists known to utilize telecourts (University of Missouri, Columbia; University of Missouri, St. Louis; Washington State University, St. Louis; University of Missouri, Kansas City). Four questions were designed to identify the experience level of the psychiatrists. The remaining questions involved ratings of patient safety, dignity of patients, technical problems, efficiency of time and ethical fairness. Likert scale responses ranging from 0–10 were used on questions 5–11. **Results:** 83.33% of respondents were board certified in psychiatry; 77.78% have testified in more than 25 civil commitment hearings and have testified in civil commitment hearings prior to the advent of telecourt. The mean Likert score (MLS) was 7.67, stating that telecourt maintains patient dignity, with a standard deviation (SD) of 2.14. MLS was 8.33 with an SD of 1.71 for telecourt providing a safer setting than a traditional courtroom setting. MLS was 5.19 with an SD of 3.6 for technical problems encountered and 4.11 with an SD of 2.3 for making psychotic patients more paranoid/vulnerable. Furthermore, the MLS was 9.35 with an SD of 1.3 and MLS of 8.39 with an SD of 2.15 for overall more efficient use of time and maintaining ethical framework, respectively. Finally, the respondents gave an MLS of 8.89 with an SD of 1.45 that all psychiatric hospitals should have

telecourt processes present for civil commitment hearings. **Conclusion:** Telecourt provides many improvements over the traditional court setting. Telecourt provides better security both at the courthouse and the hospital. For example, security staff going with a patient to the courthouse may leave remaining staff and patients on the unit vulnerable to dangerous situations. Furthermore, when hearings are held at the courthouse there is a risk of patient elopement. These risks are eliminated by having the hearing completed at the hospital on the locked unit. Telecourt provides a safer setting for courtroom participants and maintains the ethical framework and fairness of the civil commitment process. Additionally, it is an overall more efficient use of time for residents and psychiatrists. Telecourt is not without its own hurdles to overcome such as technical problems with the equipment. The inevitability of technological advances will likely lessen this burden over time. There is also a risk of leaving paranoid patients more vulnerable due to the use of technology. However, as our results show, psychiatrists in our survey agree that all psychiatric hospitals should have a telecourt process present for civil commitment hearings.

NO. 7
WITHDRAWN

NO. 8
NEW-ONSET PSYCHOSIS IN A PATIENT ON KETAMINE TREATMENT FOR DEPRESSION: A CASE REPORT
Lead Author: Arthur Thomas Carter, M.D.
Co-Author(s): Norma R. Dunn, Ronnie G. Swift

SUMMARY:
Background: Ketamine has demonstrated rapid, potent, short-lived antidepressant and anti-suicidal effects in patients with treatment-resistant depression (TRD). It has been linked to psychiatric symptoms resembling the positive, negative and cognitive symptoms of schizophrenia. It's efficacy as an antidepressant has been attributed to its ability to block glutamate NMDA receptors noncompetitively. It has been suggested that the psychiatric symptoms in the form of perceptual alterations, cognitive disorganizations and delusional interpretations are the result of changes in cerebral blood flow (CBF) in the anterior and subgenual areas of the cingulate cortex of the brain. **Case:** We present the case of a 44-year-old male who was transferred to the psychiatric emergency room at our hospital after his residence called 911 because he was displaying acutely disorganized, aggressive and threatening behavior. On evaluation in the psychiatric emergency room, the patient continued to present in a disorganized, aggressive psychotic state accompanied by paranoid ideation. He was offered oral medications but refused. He was imminently dangerous and therefore was given an intramuscular injection of haloperidol 5mg and lorazepam 2mg. History revealed diagnosis of major depressive disorder unresponsive to several trials of antidepressants. He was started on ketamine treatment for his depression about eight hours before he was transported to the psychiatric emergency room. He gradually became aggressive, threatening and psychotic during the course of the day after he received his ketamine treatment. He denied substance and alcohol abuse; however, his urine toxicology screen was positive for phencyclidine (PCP). His laboratory results, liver function tests, complete blood count, basic metabolic profile and thyroid function tests were within normal limits. The patient was hospitalized for stabilization for three days. **Discussion:** There are many drugs known to produce a false-positive PCP drug urine toxicology, including ketamine, venlafaxine, thioridazine, tramadol, dextromethorphan, alprazolam and carvedilol. Ketamine is a PCP derivative that produces dissociative effects. In the case of our patient, we believe the psychiatric manifestations were related to his treatment of ketamine, which resulted in his subsequent uncharacteristic, aggressive, disorganized, psychotic behavior. **Conclusion:** Our case report highlights the importance of the potential side effects and the false positive toxicology for PCP following ketamine use for the rapid treatment for depression.

NO. 9
WITHDRAWN

NO. 10
TRENDS IN ASIAN-AMERICAN UTILIZERS OF COUNTY MENTAL HEALTH SERVICES
Poster Presenter:Richard J. Lee, M.D.
Lead Author: Janet Charoensook, M.D.
Co-Author(s): Julia Hoang, M.D., Andrew Elliott, M.D.

SUMMARY:
Background: In 2003, the National Latino and Asian-American Study (NLAAS) reported that 8.6% of Asian-American respondents sought mental health

help, while only 3.1% sought that help from a mental health provider. Literature on utilization of mental health services among Asian-American/Pacific Islander (AAPI) consumers has lacked specific breakdown on ethnicities and barriers that have led to certain disparities. For example, the NLAAS mostly targeted respondents who were Chinese, Filipino and Vietnamese, while classifying the rest as "Other Asian." Thus, this is not a complete picture of the diverse, heterogeneous AAPI population. There is little analysis of AAPI consumers of county mental health services. In Riverside County, CA, (population 2.2 million), the AAPI population was estimated to be around six percent. This studu analyzes the AAPI consumers of mental health services provided by the Riverside County Department of Mental Health (RCDMH) in order to elucidate the barriers for this population and better understand the diagnoses in order to eliminate the disparities in mental health services. **Methods:** The authors derived data concerning ethnicity, age, gender and diagnosis from the "Who We Are" study and the AAPI client utilization reports collected annually by the RCDMH. The authors focused on a five-year span of the data from 2010 to 2015. Ethnicity, age, gender and diagnosis were the independent variables analyzed in this study and then compared with the demographics of other consumers in the county along with the results of the NLAAS from 2002 to 2003. **Results:** RCDMH served a mean of 43,632.8 patients between 2010 and 2015. However, in that five-year span, AAPI patients only made up a small fraction of those patients (mean 671.8). In 2010, AAPI patients made up 2.7% of the population. By 2015, the AAPI patients dwindled to 0.9% despite an increase in the county population from 6.0% to 6.2%. In the year 2013–2014, AAPI consumers (n=827) predominantly identified as Filipino American (17%), followed by Other Asian (12%). The rest of the consumers identified themselves as Asian Indian, Cambodian, Chinese, Guamanian, Hmong, Japanese, Korean, Laotian, Mien, Native Hawaiian, Other Pacific Islander, Samoan and Vietnamese—an array of diverse, heterogeneous ethnicities. **Discussion:** The results show a downward trend in AAPI consumers despite increases in the county population. Many factors can account for this downward trend, such as stigma, recovery and migration. Also, there are multiple cultural factors to be cognizant of as "Asian American" is a broad umbrella for multiple ethnicities, each with its own cultures, languages and stigma. It is important to attend to these barriers in order to eliminate the apparent and obvious disparities in mental health services for the Asian-American population.

NO. 11

A META-ANALYSIS OF PLACEBO-CONTROLLED TRIALS OF NAC AUGMENTATION IN SCHIZOPHRENIA: POSSIBLE OXIDATIVE PROFILE EFFECTS

Lead Author: Alexander Chen, B.A.
Co-Author(s): John T. Chibnall, Ph.D., Henry A. Nasrallah, M.D.

SUMMARY:

Background: Several studies have reported that schizophrenia is associated with mitochondrial abnormalities, glutathione deficit and increased brain oxidative stress (free radicals). N-acetylcysteine (NAC) is a strong antioxidant with potential therapeutic benefit in schizophrenia according to some reports. We conducted a meta-analysis of the published controlled studies with the goal of determining the efficacy profile of NAC as an adjunctive treatment for schizophrenia. **Methods:** An online search was conducted for all placebo-controlled, randomized, double-blind, clinical trials of NAC in schizophrenia using the terms "N-acetylcysteine," "N-acetyl-L-cysteine," "NAC," "schizophrenia," "prodrome," "schizophreniform" and "schizoaffective," and a meta-analysis was conducted. **Results:** Two studies met the criteria for inclusion. Berk et al. (2008) used NAC as an adjunctive treatment to atypical antipsychotics (45% clozapine, 20% olanzapine, remainder risperidone, quetiapine or aripiprazole) in stable chronic subjects (n=140, mean duration of illness 12.4±8.2 years). NAC treatment at eight weeks was less efficacious than placebo, but 24 weeks of treatment with NAC produced significant reductions versus placebo in Positive and Negative Syndrome Scale (PANSS) negative (d=0.52), general (d=0.46) and total scores (d=0.57). The second trial by Farokhnia et al. (2013) used NAC as an adjunctive treatment to risperidone in chronic subjects with active psychosis (n=42, mean duration of illness 6.94±3.42 years). Eight weeks of treatment led to clinically significant reductions versus placebo in PANSS negative (d=0.96), general (d=0.59) and total scores (d=0.88). **Conclusion:** The effect sizes in the two controlled trials were medium to high. The data suggest that the adjunctive antioxidant NAC may be efficacious in reducing negative and general symptoms in schizophrenia. The two published studies suggest that adjunctive NAC treatment may represent a

useful adjunctive therapy in schizophrenia. Controlled trials in first-episode psychosis and even during the prodrome are warranted. Studies measuring the effects of NAC on elevated oxidative stress biomarkers (such as thiobarbituric acid reactive substances and catalase) would be particularly useful.

NO. 12

FRONTAL ALPHA ASYMMETRY IN PEOPLE WITH EARLY LIFE TRAUMA: A RESTING-STATE MAGNETOENCEPHALOGRAPHY STUDY

Lead Author: Jooah Cheon
Co-Author(s): Se Joo Kim, M.D., Ph.D., Min Jung Koh, M.D., Jin Woo Chang, M.D., Ph.D., Bong-Soo Kim, Ph.D., Chan-Hyung Kim, M.D., Ph.D., Eun Hee Hwang, Sung Yun Sohn, M.D., Jee In Kang, M.D., Ph.D.

SUMMARY:
Background: Frontal asymmetry in the alpha-band activity during the resting state has been suggested as a potential vulnerable biomarker for depression. Early life trauma may increase vulnerability to psychiatric disorders such as depression in later life. This study evaluated the association between the presence of early life trauma and resting frontal alpha asymmetry in young adults using magnetoencephalography (MEG). **Methods:** Twenty-one healthy male subjects (mean age=22.6) participated in this study. Depressive symptoms were assessed using the Hamilton Depression Rating Scale-17, and self-reports including the Childhood Traumatic Events Scale were performed. The MEG resting-state scans for all participants were recorded with a 152-channel whole-head MEG system (KRISS, Daejeon, South Korea). Resting frontal alpha asymmetry indices were calculated by subtracting the left frontal power from the right frontal power of alpha-band, and the variables were compared between two groups classified according to the presence or absence of traumatic events before age 17. **Results:** At high alpha-band frequency (10–13Hz), frontal alpha asymmetry in people with early life trauma was significantly reduced compared to those without early life trauma (p=0.012). **Conclusion:** Early life trauma might influence the resting frontal alpha activity, and the degree of frontal asymmetry in the high alpha-band activity may be a biomarker for risk of depression.

NO. 13

EFFECTS OF PSYCHOTROPIC DRUGS ON SEIZURE THRESHOLD DURING ELECTROCONVULSIVE THERAPY

Lead Author: Su Hyuk Chi
Co-Author(s): Seung Hyun Kim, Hyun Ghang Jeong

SUMMARY:
Background: Seizure threshold (ST) varies in patients who undergo electroconvulsive therapy (ECT). It is therefore necessary to titrate for the lowest level of energy needed to induce a proper seizure at the beginning of each treatment series. Titration is crucial for achieving optimal treatment results while lowering risks of possible side effects. Most patients undergoing ECT also take concomitant psychotropic drugs, but little information is available on how these drugs affect seizure thresholds. **Objective:** Analyze relationships between seizure thresholds and psychotropic drugs in a sample of patients treated with ECT. **Methods:** Clinical, demographic and ECT data from 43 patients were examined. Seizure threshold was titrated at each treatment session. ECT was performed using a Mecta® device. Propofol (1–2mg/kg) was used for anesthesia. The association between seizure threshold and psychotropic drugs was examined using bivariate correlation analysis. Data were presented as the initial ST, the difference in seizure threshold between the first and the 10^{th} session (Î”ST), and the mean difference in seizure threshold from the first through the last session (mean Î”ST). **Results:** Multivariate regression analyses showed positive correlations between initial ST and the total chlorpromazine equivalent dose of antipsychotics (β=0.363, p<0.05). The total fluoxetine equivalent dose of antidepressants was positively correlated to Î”ST (β=0.486, p<0.05) and mean Î”ST (β=0.472, p<0.05). Initial ST was also associated with serum triglyceride levels (β=0.390, p<0.05). Serum LDL levels showed associations with Î”ST, whereas mean Î”ST was associated with serum T3 levels (β=0.326, p<0.05). **Conclusion:** Our study elucidated possible effects of psychotropic drugs on ST in patients undergoing ECT. We revealed that larger doses of antipsychotics are associated with higher initial ST, whereas higher doses of antidepressants are associated with greater shifts of ST during the course of treatment. These results can help aiming for best treatment efficacies in clinical practice.

NO. 14

THE EFFECTS OF CAREGIVER BURDEN, DEPRESSION AND EMOTION EXPRESSION ON A PATIENT'S PERCEIVED CRITICISM IN BIPOLAR DISORDER

Lead Author: Jenna Cohen, B.A.
Co-Author(s): M. Hawes, B.A., M. McGinnis, B.A., D. McClure, B.A., I. Galynker, M.D., Ph.D.

SUMMARY:
Background: In the past, studies involving caregivers of individuals with psychiatric illnesses have focused on treatment outcomes for patients while ignoring the effects of the illness on the caregiver. More specifically, caregivers of individuals with bipolar disorder experience burden, which is also associated with depression and levels of expressed emotion (EE). These psychological factors impact a patient's perceived criticism, which in turn affects the severity of their illness. This study examines the relationship between caregiver burden, depression and EE, in addition to patients' levels of perceived criticism. **Methods:** Subjects included 90 patients and 74 caregivers at the Richard and Cynthia Zirinsky Center for Bipolar at Mount Sinai Beth Israel in New York City. During the study intake, caregiver burden, depression and EE were assessed using the Mood Disorder Burden Index (MDBI), Center for Epidemiologic Studies-Depression Scale (CES-D) and Family Attitude Scale (FAS); patient-perceived criticism was measured using the Perceived Criticism Scale (PCS). As a preliminary analysis, data in this study were analyzed using Pearson's correlation, which measures the linear correlation between two variables. **Results:** For caregivers, there was a significant relationship between burden frequency and depression (r=0.001, p=0.01) and burden reaction and depression (r=0.017, p=0.05). Additionally, there was a significant relationship between burden frequency and emotion expression (r=0.000, p=0.01) and burden reaction and emotion expression (r=0.000, p=0.01). For patients, there was a significant relationship between perceived criticism and caregiver burden frequency (r=0.038, p=0.05) and perceived criticism and burden reaction (r=0.010, p=0.05). The relationship between patients' perceived criticism and depression was nearing significance (r=0.070), while the relationship between perceived criticism and EE was insignificant. **Discussion:** Caregivers are likely to experience burden, depression and high EE when caring for an individual with bipolar disorder. Furthermore, caregivers experiencing severe burden may influence a patient's perceived criticism, which can exacerbate their symptoms. The evidence provided by this study supports the need for a family-inclusive treatment for bipolar disorder, which allows a caregiver to participate in patient treatment and work through the issues associated with caring for the patient.

NO. 15

NEUROCOGNITIVE FUNCTIONS CHARACTERISTICS OF MILD COGNITIVE IMPAIRMENT WITH DEPRESSION

Lead Author: Hyunseok Dong, M.D., Psy.D.
Co-Author(s): Changsu Han, Sang Won Jeon, Seoyoung Yoon, Hyun-Ghang Jeong, Yu Jeong Huh, Young-Hoon Ko, Chi-Un Pae, Seung Hyun Kim, Ashwin A. Patkar, David C. Steffens

SUMMARY:
Background: Previous studies suggest that there is a strong association between depression and cognitive decline and that concurrent depressive symptoms in MCI patients could contribute to a difference in neurocognitive characteristics compared to MCI patients without depression. The authors tried to compare neurocognitive functions between MCI patients with and without depression by analyzing the results of neuropsychological tests. **Methods:** Subjects included 153 MCI patients. Based on the diagnosis of major depressive disorder, the subjects were divided into two groups: depressed MCI (MCI/D+) versus. nondepressed MCI (MCI/D−). The general cognitive and functional statuses of subjects were evaluated, and a subset of various neuropsychological tests was presented to subjects. Demographic and clinical data were analyzed using Student t-test or chi-square test. **Results:** A total of 153 subjects were divided into two groups: 94 MCI/D+ patients and 59 MCI/D− patients. Age, sex and years of education were not significantly different between the two groups. There were no significant differences in general cognitive status between MCI/D+ and MCI/D− patients, but MCI/D+ subjects showed significantly reduced performance in the six subtests (Contrasting Program, Go-no-go task, Fist-edge-palm task, Constructional Praxis, Memory Recall, TMT-A) compared to MCI/D− patients. **Discussion:** There were significantly greater deficits in neurocognitive functions, including verbal memory, executive function, attention/processing speed and visual memory, in MCI/D+ subjects compared to MCI/D−. The design of this study was cross-sectional, so the authors couldn't examine the exact mechanisms linking depression and cognitive deficits. Once the mechanism is identified, distinct

approaches in treatment or prevention will be determined.

NO. 16

EFFICACY OF AZITHROMYCIN TREATMENT FOR PANDAS IN A PEDIATRIC OUTPATIENT SETTING

Lead Author: Sarah Elmi, M.D.
Co-Author(s): Susan Schulman, M.D., David Neger, M.D., Theresa Jacob, Ph.D.

SUMMARY:

Background: Strep A has been associated with and has been implicated as a cause of pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS). Several investigators have postulated that the pathogenesis of PANDAS suggests group A streptococcal (GAS) infection in a susceptible host, causing an abnormal immune response with resultant central nervous system manifestations. Currently, one of the five working criteria for clinical diagnosis of PANDAS is a temporal relationship between GAS infection and the onset or exacerbation of symptoms. Hence, there may be a role for prophylactic antibiotics and/or immune modulating therapies in the prevention and treatment of PANDAS. Azithromycin, a macrolide antibiotic, has potent anti-autoinflammatory properties and has been noted anecdotally by many clinicians to have profound effects on the behavioral, sensory and motor symptoms of PANDAS. **Objective:** Study the efficacy of treating PANDAS with azithromycin in a pediatric outpatient setting; determine if any epidemiological patterns could be found in our patient cohort, such as gender association, the time frame to developing PANDAS following a strep A infection, the presence or absence of a reported history of GAS infection, and association of recurrence with gender. **Methods:** In this IRB-approved retrospective study, 223 out of approximately 800 charts of outpatients diagnosed with PANDAS were reviewed. Only patients who received azithromycin as their first treatment were included. Main measures used for analysis included the patient's age, gender, clinically observed and collateral reports of improvement or lack of thereof with azithromycin treatment, reports of recurrence of symptoms following discontinuation of treatment, history of past GAS infection, and reported time from GAS infection to PANDAS symptoms. **Results:** More than half the patients had a history of GAS infection, of which a majority (55%) reported multiple past infections. Over half the patients (52%) had recurrence of PANDAS, and males demonstrated higher recurrence (p=0.057). The average period from GAS to PANDAS was approximately five weeks. Many patients could not recall the exact time from last GAS infection until PANDAS symptoms (or was not recorded). Following treatment with azithromycin, favorable results were recorded in 79.5% of the cases. **Conclusion:** There continues to be controversy surrounding PANDAS, as there are questions that need to be studied further, such as if PANDAS is actually an autoimmune disease, the nature of association between group A strep and PANDAS and if antibiotic treatment is warranted. Our data demonstrate favorable response to azithromycin treatment. However, further studies with larger sample sizes and multicenter clinical trials are necessary for azithromycin to become the drug of choice for this syndrome.

NO. 17

WHAT HAPPENED TO THE FAX? QUALITATIVE EVALUATION OF SPECIALTY MENTAL HEALTH REFERRALS TO TRANSITION CARE TO PRIMARY CARE

Lead Author: Anna Fiskin, M.D., M.Sc.
Co-Author(s): Melanie Thomas, James Dilley, Joshua Parmenter, Christina Mangurian

SUMMARY:

Background: With implementation of the Affordable Care Act, integration of care has become a priority policy focus. Although there is considerable evidence on how best to integrate mental health treatment into primary care, there is little evidence guiding policymakers about how to transition stabilized patients from specialty mental health back into primary care settings. Currently, the City and County of San Francisco Department of Public Health is exploring how to effectively transition patients using the Plan-Do-Study-Act (PDSA) tool to explore how to achieve successful step-down of care. **Objective:** Inform the practice model for transition of clients from one urban specialty mental health clinic to primary care. To meet our study goals, we will complement the PDSA by conducting qualitative interviews with patients, staff at specialty mental health and primary care, and administrators to elucidate barriers and proposed solutions to improve the transition process. **Methods:** Semi-structured interviews will be conducted with two patients and randomly selected staff members at one urban specialty mental health clinic (Chinatown North Beach Mental Health Services) and its sister primary

care clinic. The initial PDSA cycle was initiated using fax as the primary referral system. We anticipate interviewing two patients, four staff members, and two administrative leaders. After the process is improved based on results, we will conduct interviews again for the second round of the PDSA cycle. Ninety-minute interviews will be digitally recorded, and detailed notes will be taken during the interview. Thematic framework methodology will be used to analyze and report our qualitative data. **Results:** Preliminary findings show that staff at the clinic are confused about the process and are conflicted about their role. They have requested a clear policy that they can share with clients about criteria for transition to primary care, but such a policy does not currently exist. Initial interviews demonstrate that mental health staff feels additionally burdened by feelings like they are abandoning these patients. They would also like to be more involved in the conversation with primary care about how to streamline transitions and would like to better understand what treatment options the primary care clinics will provide. **Discussion:** The evidence base for best practices regarding transitions of care is limited, especially encompassing provider, patient and administrative perspectives. The exploration of this process as the systems change occurs will help develop a better practice model for the clinic. Results from the study can more broadly inform future efforts for transition from specialty mental health to primary care in other practice settings.

NO. 18

PATIENTS WITH PSYCHOTIC DISORDERS RECOGNIZE FACIAL EMOTIONAL EXPRESSION BETTER IN EMOTICONS COMPARED TO IMAGES

Lead Author: Mohammad A. Ghairatmal

SUMMARY:

background: One of the well-documented findings in patients with schizophrenia is the deficit in processing facial expressions of emotional states. It is, however, unclear whether these patients are deficient in interpreting the intensity of facial expression or the emotional states altogether. In this study, we examine the ability of patients with a diagnosis of schizophrenia or schizoaffective disorder to identify the facial expression in emoticons and pictures of common emotional expressions. **Methods:** We recruited 10 normal individuals and 20 patients with diagnoses of schizophrenia and schizoaffective disorders. Individuals were presented with pictures of emotional states and emoticons along with a list of emotions to be matched to the images and emoticons. **Results:** The patients suffering from schizophrenia and schizoaffective disorders were able to correctly identify emotional expression in emoticons significantly better than in images (91.7% vs. 73%, p=0.0001, Fisher's exact test). **Conclusion:** To our knowledge this is the first study to evaluate the ability of patients with severe psychotic disorders to differentiate between gross and subtle facial changes during expression of emotional states using emoticons. Our findings suggest that patients suffering from schizophrenia and schizoaffective disorders may have difficulty understanding the subtle facial expression of emotions with relative preservation of ability to recognize the stereotypical features of facial emotional expressions. Further research is needed to validate these findings.

NO. 19

C-REACTIVE PROTEIN IS ASSOCIATED WITH SYMPTOM SEVERITY IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Sumana Goddu, M.D., M.P.H.
Co-Author(s): Ruchir Arvind Patel, Ramandeep S. Kahlon, Satyajit Mohite, Titilayo Makanjuola, Osarhiemen Aimienwanu, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:

Background: Many studies have found increased levels of C-reactive protein (CRP), a proinflammatory acute phase reactant, in patients with schizophrenia (SZ). There is also evidence suggesting an association between CRP and severity of psychopathology, particularly the negative symptoms of SZ. CRP has also been linked to depression. CRP is a possible state-related biomarker in SZ, but its role is still unclear. Therefore, we examined the association of plasma CRP levels with Positive and Negative Syndrome Scale (PANSS) scores in patients with schizophrenia. **Methods:** Fifty-seven subjects were enrolled for a matched case-control study. The sample consisted of 38 patients (cases) with SZ (diagnosed with the Mini International Neuropsychiatric Interview version 5) and 19 healthy subjects (controls). For all study subjects, fasting blood samples were collected, and plasma CRP was measured using ELISA. The distribution of CRP was skewed to the right, and we therefore log-transformed the CRP levels for each study participant in an attempt to normalize the data.

Student's t-test was used to compare log-transformed CRP levels between cases and controls. For the 38 cases, symptomatology was assessed using the PANSS. Pearson correlations were used to assess the association of CRP levels with PANSS scores. **Results:** CRP levels did not differ between cases and controls. There was a positive correlation between CRP and the PANSS negative subscale (r=0.388, p=0.019) and general psychopathology (r=0.383, p=0.021). There was no correlation with the positive subscale or total PANSS score. **Conclusion:** This study shows that CRP levels are positively correlated with the severity of negative and general psychopathology symptoms in SZ, as measured by the PANSS. The association with negative symptoms is notable. Our findings are consistent with those reported in other studies and lend support to the theory that SZ is an inflammatory condition. CRP may have a role in phenotyping the disease process and developing treatment strategies. Further research is needed to validate CRP as a clinically viable biomarker in SZ. **Keywords:** Schizophrenia, PANSS, CRP, Inflammation, Severity, Biomarker

NO. 20

IMPULSIVITY AND ANHEDONIA IN BIPOLAR PATIENTS

Lead Author: Mariah Hawes, B.S.
Co-Author(s): MegAnn McGinnis, Jenna Cohen, Deimante McClure, Igor Galynker, Zimri Yaseen

SUMMARY:

Background: The tendency to act impulsively and reduced hedonic capacity are observed in several psychiatric populations. Little attention has been given to the relationship between impulsivity and anhedonia, which could be important due to known association of both constructs with indices of suicidal behavior. Given the high suicide rate in bipolar disorder, this study compares correlation between anhedonia and impulsivity across bipolar mood states. **Methods:** Patients seeking treatment for bipolar disorder were recruited from the Richard and Cynthia Zirinsky Center for Bipolar Disorder in New York City as part of a larger study of family-inclusive bipolar treatment. Patients' diagnoses were established using SCID-I interview; self-reported impulsivity was measured using the Barrat Impulsiveness Scale, and questions on the Center for Epidemiological Studies Depression Scale and Hamilton Depression Rating Scale assessed anhedonia in bipolar patients (n=46). **Results:** Pearson's correlation demonstrated an association between non-planning impulsivity and anhedonia in depressed bipolar patients, r(24)=0.409, p=0.047. No relationship between anhedonia and measures of impulsivity was observed in manic or hypomanic bipolar patients. **Conclusion:** These results suggest a mood-specific relationship between non-planning impulsivity and anhedonia in depressed bipolar patients. Further research is needed to establish the impact of this relationship on suicidal behavior in bipolar depression.

NO. 21

TWO THRESHOLD OR FOUR SUBTHRESHOLD MOOD ELEVATION SYMPTOMS PROLONG TIME TO RECOVERY FROM BIPOLAR DEPRESSION

Lead Author: Farnaz Hooshmand, M.D.
Co-Author(s): Saloni Shah, B.S., Laura D. Yuen, B.A., Shefali Miller, M.D., Po W. Wang, M.D., Terence A. Ketter, M.D.

SUMMARY:

Objective: Examine the effects of mixed (mood elevation) symptoms on rate of and time to recovery from depression in bipolar disorder (BD). **Methods:** Stanford BD Clinic outpatients enrolled 2000–2011 were assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation and monitored longitudinally for two years with the STEP-BD Clinical Monitoring Form while receiving naturalistic treatment. Prevalence and clinical correlates of mixed depression (i.e., at least two threshold or four subthreshold mood elevation symptoms) were assessed. Kaplan Meier survival analyses assessed times to recovery from depression in patients with mixed versus pure depression, and Cox Proportional Hazard regression analyses assessed covariate effects. **Results:** Mixed (58.8%, 90/153) compared to pure (41.2%, 63/153) depression was significantly more common in our BD outpatients (p=0.003) and was associated with higher rates of bipolar II disorder (71.1% vs. 47.6%, p=0.004) and lifetime anxiety (86.7% vs. 63.5%, p=0.002), alcohol use (46.7% vs. 28.6%, p=0.03) and personality (20.0% vs. 6.3%, p=0.02) disorders; having had 10 or more prior mood episodes (80.0% vs. 58.6%, p=0.008); childhood (age≤13) onset (31.1% vs. 12.7%, p=0.01); current anxiety (64.8% vs. 40.3%, p=0.005); current irritability (76.1% vs. 25.8%, p<0.0001); current euphoria (19.3% vs. 2%, p=0.0006); college graduation (46.7% vs. 27%,p=0.02); and current full-time employment (33.3% vs. 14.3%, p=0.009), as

well as earlier onset age (15.2±6.2 vs. 19.8±9.0, p=0.0003), but lower rates of prior psychiatric hospitalization (18.9% vs. 36.5%, p=0.02), mood stabilizer usage (52.2% vs. 73.0%, p=0.01) and recovery from depression (46.7% vs. 63.5%, p=0.048). Survival analyses indicated that mixed depression yielded longer time to recovery from depression (log-rank p=0.017) that was not merely due to the above-mentioned demographic and illness characteristic differences, but only nonsignificantly longer median time to 25% recovery from depression (194 vs. 134 days, p=0.23). Data were limited to the American tertiary BD clinic referral sample. **Conclusion:** Mixed BD depression was associated with higher rates of bipolar II, lifetime anxiety, alcohol use and personality disorders; having had 10 or more prior mood episodes; childhood onset; current anxiety; current irritability; current euphoria; college graduation; and current full-time employment, as well as earlier onset age, but lower rates of prior psychiatric hospitalization, mood stabilizer usage and recovery from depression, as well as longer time to recovery from depression, with the latter not merely due to the above-mentioned demographic and illness characteristic differences. Additional research is needed to determine whether or not high numbers of subthreshold mood elevation symptoms ought to count toward mixed depression in BD.

NO. 22

TRAIT AGGRESSION AND RELATIONSHIP WITH PLASMA PHENYLALANINE/TYROSINE RATIO AND TOXOPLASMA GONDII SEROPOSITIVITY

Lead Author: Ashwin Jacob Mathai, M.D.
Co-Author(s): Thomas B Cook, Ph.D., Dietmar Fuchs, Ph.D., Ina Giegling, M.D., Annette M. Hartmann, Ph.D., Bettina Konte, Ph.D., Lisa A. Brenner , Ph.D., Marion Friedl, Ph.D., Christopher Lowry, Ph.D., Maureen W. Groer, Ph.D., Dan Rujescu, M.D., Teodor T. Postolache, M.D.

SUMMARY:
Latent infection with Toxoplasma gondii (T. gondii) is associated with major mental illness and may, through reactivation, contribute to low-grade inflammation and self-directed violence. Inflammation further inhibits the function of phenylalanine hydroxylase (PAH), the enzyme that converts phenylalanine (Phe) to tyrosine (Tyr), which is the first step in the synthesis of dopamine. Moreover, T. gondii infecting the brain is able to directly synthesize dopamine. We thus explored the relationship between trait aggression and the ratio between plasma levels of phenylalanine and tyrosine, a proxy for PAH activity, in T. gondii seropositive versus. negative individuals. Since the interaction between T. gondii status and personality has been previously shown to be sex-dependent, we performed the analysis separately for men and women. 1,000 psychiatrically healthy adults (age=53.4±15.7, M=489, 48%) were recruited in Germany after ruling out axis I and II disorders by SCID for *DSM-IV*. The Questionnaire for Measuring Factors of Aggression (FAF–Fragebogen zur Erfassung von Aggressivitätsfaktoren), a German version of the Buss-Durkee Hostility Questionnaire, was administered, and T. gondii IgG were measured with ELISAs. Plasma Phe and Tyr levels were determined using HPLC. Linear regression models, after accounting for age, BMI and education (proxy for socioeconomic status) were used after stratifying by T. gondii status and sex. Phe:Tyr ratio correlated positively with FAF–Spontaneous Aggression in males (p=0.04) and negatively with FAF–Irritability scores in females (p=0.008), irrespective of T. gondii status. In males (but not females) who were positive for T. gondii, higher Phe:Tyr ratio predicted higher FAF–Total Aggression, FAF–Self Aggression (p=0.050), FAF–Spontaneous Aggression (p=0.004) and FAF–Reactive Aggression (p=0.046). It is possible that lower production of tyrosine diminishes a compensatory effect of dopamine production by the parasite, masking, only in males, an aggression-promoting effect of T. gondii. Intersection of biomarkers, demographic variables and personality traits may lead to better prognosis and individualized treatment of violence, directed toward self or others. This research was supported by a Distinguished Investigator Award from the AFSP with additional funding from the Rocky Mountain MIRECC, Denver, CO, the Joint Institute for Food Safety and Applied Nutrition, through the cooperative agreement with the FDA: FDU.001418, and the VISN5, MIRECC, Baltimore, MD. The findings and conclusions in this study are those of the authors and do not necessarily represent the official positions of the FDA, VA or AFSP.

NO. 23

EXPLORATORY AND CONFIRMATORY FACTOR ANALYSIS OF PENN STATE WORRY QUESTIONNAIRE (PSWQ)

Lead Author: Junwon Jeon, M.D.
Co-Author(s): Taehwa Jung, Hongrae Kim, Yongchon Park

SUMMARY:

Background: Over the past 12 years, the Penn State Worry Questionnaire (PSWQ) has been used in most psychosocial studies of worry and generalized anxiety disorder (GAD), including treatment outcome trials, analog worry research, laboratory investigations and GAD psychopathology studies. **Objective:** This study examined the psychometric properties of a common clinical measure, the Penn State Worry Questionnaire. **Methods:** PSWQ data were gathered from 436 people newly visiting a psychiatric health exhibition. We performed exploratory factor analysis (EFA) on healthy controls (n=318) and confirmatory factor analysis (CFA) on people with psychiatric diagnosis (n=118) of all 16 items of the scale. CFAs indicated that the measurement properties of the PSWQ were invariant in male and female patients. **Results:** In addition to their direct relevance to the psychometrics of the PSWQ, the results are discussed in regard to methodological considerations for using factor analytic methods in the evaluation of psychological tests. **Keywords:** PSWQ, EFA, CFA

NO. 24

WORK PRODUCTIVITY IMPROVEMENT IN RECURRENT MDD PATIENTS: IMPLICATIONS FOR FUTURE CLINICAL IMPROVEMENT

Lead Author: Manish K. Jha, M.B.B.S.
Co-Author(s): Abu Minhajuddin, Ph.D., Tracy Greer, Ph.D., Thomas Carmody, Ph.D., John Rush, M.D., Madhukar Trivedi, M.D.

SUMMARY:

Background: Most of the economic burden associated with major depressive disorder (MDD) is accounted for by lost work productivity. While effective treatment of depression results in improved work productivity, little is known about if this improvement is fully accounted for by change in depression severity and the long-term effects of this improvement. **Methods:** We used data from multiple visits of both acute and continuation phases of the Combining Medications to Enhance Depression Outcomes (CO-MED) trial to evaluate changes in work productivity before and after controlling for change in depression symptom scores and select baseline clinical and sociodemographic variables. Using a data-driven longitudinal-grouping approach, we identified trajectories of changes in work productivity loss during the first six weeks of treatment and evaluated the association of these trajectories with clinical improvement after 12 and 28 weeks of antidepressant treatment. **Results:** After 12 weeks of antidepressant treatment, reductions with time were statistically significant for all measures of work productivity before (absenteeism: $F=6.34$, degrees of freedom (df)=7, $p<0.0001$; presenteeism: $F=22.82$, df=7, $p<0.0001$; work productivity loss: $F=22.85$, df=7, $p<0.0001$) and after (absenteeism: $F=4.58$, df=6, $p=0.0001$; presenteeism: $F=22.82$, df=6, $p=0.0215$; work productivity loss: $F=4.02$, df=6, $p=0.0005$) controlling for change in depression symptom scores and baseline clinical and sociodemographic variables, including baseline levels of depression symptom and each work productivity measure. Based on changes in work productivity loss after six weeks of treatment, we identified the following three longitudinal groups: 1) Robust early improvement (REI); 2) Minimal change (MC); and 3) High impairment slight reduction (HISR) based on changes in work productivity at six weeks. After controlling for baseline clinical and sociodemographic characteristics and remission status at week 6, those in the REI group had higher remission rates at 12 weeks (REI vs. MC: OR=2.898, 95% CI [1.004, 8.333]; REI vs. HISR: OR=5.319, 95% CI, [1.52, 18.52]) and 28 weeks (REI vs. MC: OR=2.178, 95% CI [0.691, 6.849]; REI vs. HISR: OR=5.988, 95% CI [1.538, 23.256]). **Conclusion:** Work productivity improves with antidepressant treatment, and this improvement is not fully accounted for by reductions in depression severity. Early and sustained improvement of work productivity is associated with significantly higher rates of remission at weeks 12 and 28.

NO. 25

NONCOMPLIANCE TO ANTIPSYCHOTIC MEDICATION AND NONPSYCHIATRIC MEDICAL SERVICE UTILIZATIONS AMONG PATIENTS WITH SCHIZOPHRENIA AND ITS RELATED PSYCHOSES

Lead Author: Soohyun Joe
Co-Author(s): Jung-Sun Lee, Jongseok Lim

SUMMARY:

Background: The relationship between the noncompliance of patients with schizophrenia and related disorders and increased psychiatric service utilization and costs is well known. However, there are no known studies on nonpsychiatric service utilization and costs in this patient population. This study investigated the influence of the noncompliance of patients with schizophrenia and related disorders on their utilization of

nonpsychiatric services and costs. **Methods:** The study was conducted in 2011 with a stratified, randomly selected sample of patients from a national database provided by the South Korean government. Among the 1,375,842 original patients, 7,848 patients met the inclusion criteria. The outcome measures consisted of two compliance dimensions: adherence (the extent of adherence to prescription(s) of psychiatric medication during the study's follow-up period) and persistence (presence or absence of interruptions in adherence during the follow-up period). Each of the two dimensions was categorized as adherent versus nonadherent (5,548 patients) and persistent versus nonpersistent (3,912 patients). **Results:** All nonpsychiatric service utilizations were significantly higher in the noncompliant than the compliant group. The number of emergency room visits and surgeries were higher in the noncompliant group. All nonpsychiatric costs were higher in the noncompliant group. After adjusting for sex, age, insurance type, duration of follow-up and average equivalent dose of antipsychotics, the number of visits to outpatient psychiatric clinics and the duration of psychiatric medication were higher in the nonadherent than the adherent group, and the number of psychiatric service utilizations was significantly higher in the nonpersistent than the persistent group. All medical service utilizations, except deaths, were higher in the nonadherent than the adherent group and the nonpersistent than the persistent group. Mortality rate was significantly and positively associated with nonpersistence but not with nonadherence. All psychiatric costs had significant negative associations with nonadherence and nonpersistence. All medical costs had a significant positive association with nonadherence and nonpersistence. **Conclusion:** Poor adherence to psychiatric treatment may increase medical morbidity and mortality and the economic burden of medical costs at the personal and government levels.

NO. 26
WITHDRAWN

NO. 27
HYPOKINESIA, COGNITIVE SLOWING AND EMOTIONAL DYSREGULATION IN A 17 YEAR OLD: A DIAGNOSTIC CONUNDRUM
Lead Author: Amanjot Kaur, M.B.B.S.
Co-Author(s): Vishal Madaan, M.D., M.B.B.S.

SUMMARY:

We describe the case of a 17-year-old adolescent who presented with a two-month history of gradual-onset hypokinesia, cognitive slowing and emotional dysregulation. He presented with poor focus, poor memory, deteriorating grades, a change in handwriting and difficulty doing tasks. He had a history of purposeful slow movements as he strived not to "lose his energy and muscles" built through weightlifting. He endorsed obsessions about weightlifting as well as consistent use of protein supplements to gain weight. He reported being bullied at school for being short. There was a history of maternal smoking and psychotropic use during pregnancy. Family history was significant for neuropathy and bipolar disorder. On exam, he endorsed stereotyped behaviors that included slow pacing and repeatedly stretching in a uniform manner. He endorsed a slow-paced, wide gait and reduced arm swing with a stooped posture. He had limited eye contact and muffled speech with increased latency. His affect was restricted in range and reactivity. He endorsed perseverating thought process and denied delusional thought content. He displayed inattentiveness, disorganized behaviors, diminished emotional expression and overvalued thought patterns. Preliminarily diagnosed with mild neurocognitive disorder, low dose quetiapine was initiated. During follow-up visits, he reported idiosyncratic motor behaviors and thought processes such as attempts to open the door near the hinge and "compressing food into balls to prevent crumbs from falling to conserve calories." Upon neuropsychological assessment, Michael's performance was generally consistent with his current overall intellectual functioning (low average) in most cognitive domains; however, evidence of dysexecutive difficulty was noted on his cognitive profile. Neurology ruled out juvenile Parkinsonism and Huntington's chorea, and work up for Wilson's disease, autoimmune disease, and EEG and MRI were unremarkable. While the patient appeared to have no frank paranoid delusions, he stated that a fear for his safety fueled compulsive weight training. Given the presence of obsessional, stereotypical and compulsive behaviors, OCD as well as somatic delusional disorder were considered. Diagnoses of body dysmorphic disorder and substance-induced (supplement-induced) psychosis/mood disorder were also reviewed. In addition, bullying appeared to have perpetuated the symptoms. Lastly, unspecified psychotic disorder cannot be ruled out given the cognitive slowing, "fear of safety," and restricted affect. We continue to follow up to see

any worsening of symptoms, especially as there has been minimal response to atypical antipsychotics and SSRI trials.

NO. 28

SELF-ESTEEM, IMPULSIVITY AND SUICIDAL IDEATION IN MOOD DISORDERED PATIENTS

Lead Author: Kahlen Hong Seon Kim, B.A.
Co-Author(s): Laura DeRubeis, Firouz Ardalan, Thachell Tanis, Igor Galynker, M.D., Ph.D., Lisa J. Cohen, Ph.D.

SUMMARY:

Background: Studies have identified several risk factors for suicidality, including low self-esteem and high impulsivity. Moreover, research has shown that patients suffering from mood disorders, especially bipolar disorder (BP), are particularly at risk for both completed suicide and suicide attempts. Despite advances in the understanding of the role of impulsivity and self-esteem on suicidality, no studies have investigated the interaction effect of the two within the contexts of BP and major depressive disorders (MDD). Therefore, this study examines the extent to which self-esteem and impulsivity, independently and jointly, are associated with suicidality among inpatients suffering from BP and MDD. **Methods:** Subjects were recruited from an inpatient psychiatric unit of a large urban hospital. Subjects were diagnosed with the Structured Clinical Interview for the *DSM-IV*. Trait-like impulsivity was assessed using the Barratt Impulsiveness Scale (BIS-11). The BIS-11 (total impulsivity) has three factors, including attentional, motor and nonplanning. Self-esteem was measured with the Rosenberg Self-Esteem Scale (RSES). Suicidality, specifically the severity of suicidal ideation, was evaluated with the Columbia–Suicide Severity Rating Scale (C-SSRS). **Results:** A series of multiple linear regression analyses was conducted to examine the main effects of self-esteem and impulsivity as well as their interaction effect on suicidality. Across diagnoses, there was no significant interaction effect of total impulsivity and self-esteem on the intensity of suicidal ideation, although there was a main effect of self-esteem for BP ($p<0.05$). Secondary analysis was performed using motor impulsivity (MI) and self-esteem (SE) as predictors and suicidality as the outcome variable. While the prediction model for MDD was not significant, the prediction model for BP was statistically significant ($F(3,48)=7.539$, $p<0.001$, $R^2=0.32$, $Æ'^2=0.12$). SE significantly predicted suicidality ($\beta=-0.547$, $t(48)=-3.907$, $p<0.001$), whereas MI did not. Further, the relationship between SE and suicidality was moderated by MI ($\beta=0.327$, $t(48)=2.365$, $p<0.05$), such that the negative relationship between SE and suicidality was stronger in BP patients with low MI than in BP patients with high MI. **Discussion:** These finding suggests that BP patients are differentially affected by the relationship between motor impulsivity, self-esteem and suicidality such that the association between self-esteem and suicidality was stronger in BP patients with low motor impulsivity. Moreover, the absence of the interaction between impulsivity and self-esteem in MDD patients and the overall sample indicates that evaluating low motor impulsivity may be particularly crucial for BP patients. Nevertheless, self-esteem appears to be a protective factor, and our findings highlight the importance of assessing self-esteem and motor impulsivity when managing patients with suicide.

NO. 29

THE VOLUMES OF TEMPORAL LOBE AND LIMBIC SYSTEM ARE ASSOCIATED WITH TREATMENT RESPONSE OF DELUSIONAL SYMPTOMS TO RISPERIDONE IN ALZHEIMER'S DISEASE

Poster Presenter:HwaGyu Suh, M.D.
Lead Author: Kyungwon Kim, M.D.
Co-Author(s): Hwagyu Suh, Heejeong Jeong, Youngmin Lee, Jemin Park, Byungdae Lee, Eunsoo Moon, Youngin Chung, Jihoon Kim, Hakjin Kim, Chiwoong Mun, Taehyung Kim, Younghoon Kim, Daewook Kim

SUMMARY:

Objective: Determine whether grey matter volumes are associated with treatment response of delusion in Alzheimer's disease (AD) patients. **Methods:** Risperidone, which is commonly used as an atypical antipsychotic drug, was administered to 26 AD patients with delusion for six weeks in May 2011 and June 2013. Delusional symptoms were rated with delusion item scores (severity Ã— frequency) in the Korean version of the Neuropsychiatric Inventory (K-NPI) at baseline and after six weeks, and treatment response was defined as the change of delusion item scores in K-NPI scores from baseline to six weeks. Grey matter volumes were measured with magnetic resonance imaging and voxel-based morphometry at baseline. Age, gender, years of education, total intracranial volume, dosage of risperidone, baseline Korean version of the Mini Mental Status Examination scores, and baseline K-NPI delusion and non-delusion scores were measured as covariates of

no interest. **Results:** We found that treatment response of delusion to risperidone in AD patients was positively associated with the volume of the temporal lobe (left superior temporal gyrus, left inferior temporal gyrus and both fusiform gyrus) and limbic system (left parahippocampal gyrus and left amygdala) after controlling covariates of no interest ($p<0.001$, uncorrected, KE>100 voxels). **Conclusion:** Therefore, we conclude that the volume of the temporal region and limbic system is associated with the treatment response of delusions to risperidone in AD patients.

NO. 30

ANGER COPING STYLES IN KOREAN PATIENTS WITH MOOD DISORDERS

Lead Author: Kyungwon Kim, M.D.
Co-Author(s): Hwagyu Suh, Eunsoo Moon, Je Min Park, Byung Dae Lee, Young Min Lee, Hee Jeong Jeong, Yoon Mi Choi

SUMMARY:

Background: Asian and Western people might have different anger coping styles. In Korea, there is a unique culture-bound syndrome called Hwa-Byung, which is similar to mood disorder, but it is not. Analyzing the characteristics of anger coping styles in the Asian population may be helpful for understanding patients with mood disorders. This study explored the substructure of the Anger Coping Scale (ACS), which is developed to investigate the anger coping characteristics of Koreans, and compared anger coping styles between mood disorder patient and control groups. **Methods:** We recruited 300 healthy controls and 192 patients who have experienced depressive and bipolar disorders with the *DSM-IV* Axis I criteria. All participants complete the ACS. Confirmatory factor analysis (CFA) and Cronbach's alpha were used to examine the structural validity and reliability of the scale. Factors of the ACS were compared between patients with mood disorders and healthy controls using independent t-test. **Results:** The ACS showed acceptable reliability and validity in patients with mood disorders and healthy controls. The substructures of this scale were confirmed with behavioral aggression, verbal aggression, problem solving, tension releasing and anger suppression. Behavioral aggression, verbal aggression and anger suppression were significantly more frequent, and problem solving and tension releasing were less frequent in patients with mood disorders. **Discussion:** These results suggested Korean patients with mood disorder have distinguishing characteristics of anger coping, and especially anger suppression is significantly greater than in the control group. These results showed that ACS is valid and applicable, and the reason of more frequent anger suppression in Korean mood disorder patients might be cross-cultural differences. In future studies, it is needed to compare anger coping related scales and anger coping styles of patients with mood disorder from the same culture, as well as people with different cultural backgrounds.

NO. 31

CASE SERIES: DELIBERATE FOREIGN BODY INGESTION AND BORDERLINE PERSONALITY DISORDER

Lead Author: Timothy Kiong, M.D.
Co-Author(s): June Lee, D.O., Qian (Jess) Ye, B.Sc.

SUMMARY:

Deliberate foreign body ingestions (DFBI) can be costly both financially and physically, causing damage to the gastrointestinal tract. Previous literature has reported cases of DFBI and has largely classified such behavior into four diagnostic subgroups: malingering, psychosis, pica and personality disorders. These articles have highlighted different management techniques, emphasizing treatment targeting primary psychiatric illness. We present two cases of DFBI in patients with borderline personality disorder (BPD) who have been referred to the psychiatric emergency department (ED) and consultation-liaison service. **Case:** 1) First is the case of a 65-year-old Caucasian female with a previous psychiatric history of recurrent major depressive disorder (MDD), BPD, substance use disorder and medical history significant for chronic lower back pain who presented multiple times to the ED for suicidal ideation and has had multiple previous suicide attempts including overdosing on medications and alcohol. The patient was hospitalized multiple times for DFBI (typically plastic utensils and razor blades) and had multiple surgeries to remove foreign objects from her gastrointestinal tract. The patient developed bowel obstruction due to her multiple abdominal surgeries. The patient reported that she would swallow objects in the context of feeling depressed or stressed, and these were not usually suicide attempts. She was treated with an antidepressant and antipsychotic, and since then, the episodes of DFBI have stopped, though she continued to require psychiatric hospitalization due to her depressive symptoms. 2) A 40-year-old

Caucasian female with previous psychiatric history of MDD, BPD, substance use disorder and chronic back pain frequently presented to the ED for DFBI of sharp metal objects. The patient also had multiple previous parasuicidal actions, including cutting her wrists. The patient reported that these ingestions were an attempt to get attention. She was hospitalized for perforation of her intestines due to the objects she had swallowed. She was treated with an antidepressant and outpatient psychotherapy and since then has had decreased presentations to the ED for DFBI over time as well. **Discussion:** Treating patients with DFBI can be challenging in attempting to making an accurate psychiatric diagnosis and formulation. In the cases we presented, both patients shared similar diagnoses including substance use disorders, chronic pain syndromes, BPD and MDD. Both cases had multiple complications from their ingestions, including intestinal perforation and bowel obstruction. In view of the complicated nature of treating these patients, holistic care involving a multidisciplinary team is required to improve remission.

NO. 32

THE DIETARY STATUS OF ADULTS WITH ADHD

Lead Author: Jesper N. Kjær
Co-Author(s): Louise Margrethe Arildsen Jakobsen, Mathias Lasgaard, Povl Munk-Jørgensen

SUMMARY:

Objective: Investigate the dietary status of adult patients with ADHD and correlate the severity of the ADHD diagnosis with dietary status. Furthermore, we also compared the group with ADHD with a representative sample of a healthy adult Danish population. **Methods:** Data were collected from the ADHD database operated by the ADHD outpatient clinic at Aarhus University Hospital. Approximately 500 patients are referred to the clinic annually. We used data from newly referred patients in a seven-month period from April 2014 through October 2014. The collected data include weight, height, blood pressure, somatic or psychiatric comorbidity, blood sample (LDL, HDL, cholesterol, triglycerides, vitamin D, folic acid), EKG, physical activity scale, and WHOQOL-BREF. Concerning the diagnosis of ADHD, DIVA, ASRS, BRIEF-V. Inter99 was used to assess dietary status. The representative sample was obtained as a part of a public health survey from 2010 called "How are you" conducted in the same region of Denmark as the location of the psychiatric hospital. **Results:** 143 patients were included in the study period, 52% male. The mean age was 30.9. A larger proportion of ADHD patients fall in the category "unhealthy dietary pattern," compared to the representative sample population (26% vs. 12%), while on the other hand, the proportion in the "healthy dietary pattern" category is markedly lower (14% vs. 24%). The differences seem to be explained by lower than recommended intakes of fruits and vegetables, rather than inadequate intakes of fish and healthy fat sources. No marked differences in dietary score were observed with respect to gender. **Conclusion:** Our findings suggest a general shift toward more unhealthy dietary patterns among patients with untreated ADHD. This exposes them to higher risk of somatic diseases, notably diabetes mellitus and cardiovascular disease. Lifestyle interventions could be a necessary part of standard treatment for patients with ADHD, especially targeted at the subgroup with the lowest dietary status. Further studies are needed to confirm our findings and the efficacy of lifestyle interventions for this patient group.

NO. 33

EVALUATING THE RISK OF VENOUS THROMBOEMBOLISM WITH ATYPICAL ANTIPSYCHOTIC INITIATION

Lead Author: Jessica A. Koenig, M.D.
Co-Author(s): Thomas Maestri, Christine Masuda, Tawny L. Smith, Erica C. Garcia-Pittman

SUMMARY:

Background: Elderly patients often have complicated medical histories and multiple factors that put them at higher risk for venous thromboembolism (VTE). An association between antipsychotics and VTE has been discussed in observational studies and review articles. The highest risk has been associated with use of clozapine and first-generation antipsychotics; however, there have been more recent reviews highlighting the increased potential second-generation antipsychotics have on VTE risk. **Methods:** Literature review and case descriptions. We describe two cases of clinically significant VTE with recent initiation of second-generation antipsychotic medication. **Results:** Our case will review literature on risk of VTE with antipsychotic use and highlight the varying degrees of risk between different antipsychotics. **Conclusion:** Assessing risks and benefits of antipsychotic medication presents unique challenges when trying to stabilize a psychiatrically ill patient. Managing and educating patients and families about potential risk

factors can help protect patients from medical complications that may present during the course of their treatment.

NO. 34

INTRODUCTION TO PSYCHOPHARMACOLOGY FOR PSYCHOLOGY INTERNS: A PILOT STUDY AND SAMPLE CURRICULUM

Lead Author: Jason V. Lambrese, M.D.

SUMMARY:

Background: Mental health care increasingly consists of integrated care in multidisciplinary settings, with psychiatrists often sharing patients with psychologists. Despite the wealth of knowledge on psychotherapies that psychologists have, training in psychopharmacology is variable. Unless psychologists pursue advanced training to become prescribers, they have little to no instruction in basic psychopharmacology, yet patients are presenting to them with symptoms, side effects or questions related to their medication regimen. There have been multiple calls to action for increased basic psychopharmacology curricula in psychology training. **Methods:** In response to this call for action, a "Psychopharmacology 101" curriculum was developed by a child and adolescent psychiatry fellow for psychology predoctoral interns at Boston Children's Hospital. The training consisted of three one-hour sessions held during the first two months of the academic year. The sessions were highly interactive "chalk talks" where the presenter covered the main areas of psychopharmacology: antidepressants, anxiolytics, neuroleptics, mood stabilizers, stimulants, sedative-hypnotics and medications for substance use disorders. Content included common medications within each class, basic mechanism of action, indications and side effects. Pre- and post-tests were administered at the start and end of the series to assess knowledge, attitudes and beliefs, after which participants received a list of the medications. **Results:** A total of seven psychology interns attended this three-part series. Most of the participants stated that 50% of their current patient caseload is taking psychiatric medications. Prior instruction in psychopharmacology ranged from zero to greater than five hours. Prior to the start of the sessions, all but one participant strongly disagreed or disagreed with the statement "I feel confident speaking with patients/families about their medication regimen," whereas afterward, all answered with neutral or agree. All participants strongly agreed with the statement "Psychopharmacology training is useful in my role as a psychologist." Prior to the intervention, participants could list at most one neuroleptic, whereas afterward, most could list two or three. Prior to the intervention, only three participants could name an anxiolytic, but afterward, 57% of participants could list three anxiolytics. Participants appreciated the organized and practical nature of the material in an informal atmosphere with the ability to ask questions. **Conclusion:** An interactive, three-hour introductory psychopharmacology curriculum created by a psychiatric trainee has increased the knowledge of psychology interns as measured by pre- and post-tests. Measurement of attitudes and beliefs using Likert scales and qualitative responses indicates a need for this instruction in psychology training and an increase in comfort speaking with patients/families about their medications.

NO. 35

COMPARISON OF WEARABLE ACTIVITY TRACKER TO ACTIGRAPHY FOR MEASUREMENT OF SLEEP-WAKE CYCLE

Lead Author: Hyun-Ah Lee, M.D.

Co-Author(s): Chul-Hyun Cho, M.D., Ph.D., Heon-Jeong Lee, M.D., Ph.D., Leen Kim, M.D., Ph.D.

SUMMARY:

Actigraphy has had a central role as a sleep assessment tool in sleep medicine for over 20 years. However, it is difficult to apply actigraphy to the majority of patients. Recently, various wearable activity trackers have been commonly used to promote health in the general population. The purpose of this study was to evaluate the reliability and validity of a wearable activity tracker (Fitbit charge HR) in the sleep-wake cycle measurement compared to actigraphy (Actiwatch 2). We compared wearable activity tracker and actigraphy for sleep and activity variables and circadian rhythm. Sixteen healthy adults wore Fitbit charge HR and Actiwatch 2 simultaneously on the same wrist. Participants went about their daily lives and recorded a sleep log during a 14-day period. The validity was assessed by comparing the output using Wilcoxon signed rank tests and Spearman's correlation. For sleep variables, both sleep start time ($r=0.869$, $p<0.001$) and sleep duration ($r=0.918$, $p<0.001$) are highly correlated between the two devices. However, Fitbit charge HR tends to overestimate sleep duration compared to actigraphy (mean±SD=409.7±97.6 vs. 387.3±98.3). Although activity score showed low

correlation between the two devices, period (r=0.800, p<0.001) and acrophase (r=0.980, p<0.001) of the circadian rhythm using Cosinor analysis are highly correlated. Fitbit charge HR showed strong validity for measurement of sleep variables and estimation of circadian rhythm. The results suggest that Fitbit charge HR can be used alternatively to measure the sleep-wake cycle for psychiatric disorders, especially mood disorders.

NO. 36

SELF-REPORTED EMPATHIC RESPONDING IN EUTHYMIC PATIENTS WITH BIPOLAR I DISORDER: A COMPARISON WITH SCHIZOPHRENIA PATIENTS AND HEALTHY CONTROLS

Lead Author: Byeonghee Lee, M.D.
Co-Author(s): Sung Hwa Kim, M.D., Vin Ryu, M.D., Ph.D., Hyun-Sang Cho, M.D., Ph.D.

SUMMARY:
Objective: Empathy, an important element in social cognitive functioning, is thought to be multidimensional in nature, involving both cognitive and affective components. Lack of cognitive and affective empathy and its association with poor social functioning is well clarified in schizophrenic patients, but in patients with bipolar I disorder, the results are controversial. We investigated the self-reported empathic responding and the relationships between empathy and other clinical factors in euthymic patients with bipolar I disorder and schizophrenia using a multidimensional measure. **Methods:** Forty euthymic patients with bipolar I disorder, 38 patients with schizophrenia and 58 healthy control subjects participated. To test our hypothesis, we applied the Interpersonal Reactivity Index (IRI) and compared the total scores of the four dimensions. “perspective taking” and “fantasy” represent cognitive empathy, and “empathic concern” and “personal distress” represent affective empathy. The correlations between factors such as onset age, duration of illness, education years, intelligence, and clinical scale scores and IRI scores were further investigated. **Results:** Analysis of variance showed significant difference in personal distress, but not in the other three dimensions, among the three groups (p=0.007). In post hoc comparison, euthymic patients with bipolar I disorder showed significantly higher levels of personal distress compared to the healthy control group (p=0.017). Schizophrenic patients also showed significantly elevated scores in personal distress compared to the healthy group (p=0.042). There was no significant difference between the bipolar and schizophrenia groups in all dimensions. In the bipolar group, positive correlations of personal distress scores with education years (r=0.388, p=0.013) and Montgomery-Åsberg Depression Rating Scale scores (r=0.366, p=0.020) were observed. No correlation between IRI scores and various clinical factors was found in the schizophrenia group. **Conclusion:** These preliminary results suggest that clinically stable bipolar I patients have difficulties in self-reported affective empathic responding, especially discomfort responses resulting from observing another’s negative experience, as much as patients with schizophrenia. Underlying depressive mood and previous education levels may be related to this affective empathy responding in bipolar disorder. Future studies with larger samples will be needed to study the contribution of empathic responding to illness characteristics in bipolar disorder. **Keywords:** Bipolar I Disorder, Schizophrenia, Empathy, Interpersonal Reactivity Index

NO. 37

RARE OCCURRENCE OF COVERT DYSKINESIA AFTER ARIPIPRAZOLE DISCONTINUATION: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Yassir Mahgoub, M.D.
Co-Author(s): Ahmad Hameed, M.D., Andrew Francis, M.D., Ph.D.

SUMMARY:
Objective: Describe a case of covert dyskinesia occurring three months following aripiprazole discontinuation and review literature on covert dyskinesia and tardive dyskinesia (TD) with aripiprazole; Reinforce clinical reasoning for using aripiprazole in nonpsychotic mood disorders given its potential for dyskinesia. **Background:** TD has been reported with many antipsychotics, both typical and atypical. Covert dyskinesia is a masked form of TD that becomes evident only after antipsychotic drugs are withdrawn or tapered in dosage. It is distinct from other forms of withdrawal-emergent dyskinesia by its persistence for more than three months following discontinuation of antipsychotics. Most cases occurred during tapers, but some cases were reported following discontinuation. Aripiprazole is a unique atypical antipsychotic, as it is a dopamine D2 receptor partial agonist, partial agonist at serotonin 5HT1A receptors and antagonist at 5HT2A receptors. Aripiprazole was approved by the FDA for adjunctive treatment of depressive disorder in 2007, in addition to its prior approval for use in both psychotic

disorders and bipolar disorder. **Methods:** This study included a systemic PubMed search for “aripiprazole,” “tardive dyskinesia” and “covert dyskinesia;" review of American Neurology Association (ANN) guidelines treatment of TD; and case summary of a recent patient with covert dyskinesia. **Case:** A 53-year-old male was on aripiprazole for two years for mood symptoms and augmentation of antidepressants. Aripiprazole was tapered and discontinued over two to three months. He then developed new-onset persistent orobuccal movements three months following aripiprazole discontinuation. The literature review showed TD is reported with both typical and atypical antipsychotics. Covert dyskinesia is uncommonly reported. For aripiprazole, some case reports show it induced TD, but others indicate it improved TD that had been induced by different antipsychotics. ANN guidelines for TD suggest insufficient data to support or refute TD treatment by withdrawing causative agents or switching from typical to atypical antipsychotics. **Conclusion:** Covert dyskinesia may occur with aripiprazole. Despite the lower risk of TD with atypical antipsychotics, monitoring for TD is warranted even after stopping or reducing the dose. Dyskinesia from aripiprazole and other antipsychotics reinforces considering the clinical rationale for their use in nonpsychotic mood disorders.

NO. 38

MASS SHOOTINGS AND GUN LAWS: THE ROLES OF MENTAL ILLNESS AND PSYCHIATRISTS ON THIS DEBATE

Lead Author: Pankaj Manocha, M.D.

SUMMARY:

Background: Gun violence has been a constant public health problem in the United States. We are one of the top countries in firearm-induced deaths. Access to guns is a political topic, which draws media attention, but due to our constitutional rights, guns remain widely accessible. Congress continues to ban CDC research on gun violence, and states such as Florida have a law limiting the ability of doctors to ask patients about gun ownership unless safety is an immediate concern. This puts providers in a clinical dilemma as they perform suicidal and homicidal risk assessments while respecting the rights of patients. Recently, media reports have shown firearms that were used for mass shootings were legally obtained even after federal background checks; some of the gunmen were diagnosed as mentally ill. This led to questions such as “can the presence of a mental disorder anticipate a gun crime before its occurrence?" and “can a psychiatrist prevent these gun violence crimes?" **Objective:** Understand the role of a psychiatrist in anticipating and preventing crimes involving gun violence. **Methods:** A literature review on understanding the role of providers in patients’ access to firearms was conducted using Goggle Scholar, PubMed, Ovid Medline, Psych INFO and Up-to-Date. **Discussion:** Several risk and protective factors play a role in a person’s likelihood of using the firearm against him/herself or others. Multiple sociocultural risk factors interplay in predicting gun violence, with the most powerful risk factor being a history of violent behavior. Mental illness itself is not predictive of violence. Media overemphasizes this degree of association and describes people with mental illness as dangerous. At an aggregate level, approximately four percent of violence in the U.S. is due to patients with mental illness, and the majority of people diagnosed with mental illness do not commit violent crimes. On the other hand, the literature suggests mentally ill individuals are more often victims than perpetrators of violent crimes. Research data show that a psychiatrist cannot predict which patient will commit a violent crime. Psychiatrists have a role in the national discussion around guns to better understand questions such as “why do people require guns in their lives?" and “how does gun ownership affect people’s lives?" **Conclusion:** Mental illness, mass shootings, gun laws and access to guns are complicatedly interwoven issues and may not be simplified as cause and effect. A psychiatrist may not anticipate and prevent violent crimes but may have a role in this issue of gun debate.

NO. 39

ILLNESS INSIGHT AND RISK FOR SUICIDAL BEHAVIOR IN BIPOLAR DISORDER

Lead Author: Deimante McClure, B.A.
Co-Author(s): M. McGinnis, B.A., M. Hawes, B.A., J. Cohen, B.A., Z. Yaseen, M.D., I. Galynker, M.D., Ph.D.

SUMMARY:

Background: Illness insight has been shown to have a positive association with increased suicide risk in schizophrenia. Bipolar disorder carries a higher risk of suicide than schizophrenia, yet no studies have looked at the association between bipolar illness insight and suicidality. We hypothesize that illness insight in bipolar patients will have a positive association with suicide risk. **Methods:** Patients

seeking treatment for bipolar disorder were recruited from the Richard and Cynthia Zirinsky Center for Bipolar Disorder in New York City as part of a larger study of family-inclusive bipolar treatment. Each participant was diagnosed using the Structural Clinical Interview for *DSM-IV* Disorders (SCID). History of suicide was assessed at study intake using the Columbia Suicide Severity Rating Scale (C-SSRS), and insight was assessed using the Treatment Attitude Questionnaire (TAQ). Logistic regression analysis was used to measure the relationship between suicide risk and illness insight while controlling for variables significantly associated either with history of suicide attempt (SA) or insight in univariate analyses. Spearman's correlation was used to examine association of illness insight with quality of life, childhood trauma history, social support and perceived stigma. Mann-Whitney U and chi-squared tests were used to examine the association of other variables with SA. **Results:** Forty-eight participants were recruited. Of those, 12 had history of SA. Participants with SA history had significantly higher insight scores compared to those without a history of SA (U=111.5, p=0.012). Among other variables, women had significantly more suicide attempts compared to males. Illness insight was not associated with any other variables. In logistic regression including insight and gender, both variables significantly predicted to history of suicide attempts. When the sample was restricted to only patients with the SCID-confirmed bipolar disorder diagnoses (n=38, SA history=11), only insight was significantly predicting to history of SA. **Conclusion:** Our results show that better illness insight and female gender significantly predicted a history of SA in patients seeking treatment for bipolar disorder. In a sample of individuals diagnosed with bipolar disorder, only insight remains a significant predictor to suicide history. As such, illness insight is an important factor to consider when assessing suicide risk in bipolar patients.

NO. 40

THE DILEMMA OF SYRIAN REFUGEES

Lead Author: Aida Spahic Mihajlovic, M.D., M.S.
Co-Author(s): Nicole Nguyen Perras, M.D., Sandeep Dendaluri, M.D., Eric Kocher, Allen Dyer, M.D., Cody Krueger, B.A., Kristina Mihajlovic, B.A., B.M.S., Amanda King, B.A., Catherine May, M.D.

SUMMARY:

Background: During the first nine months of 2015, an estimated 500,000 refugees passed through Greece in an attempt to reach Western Europe. This crisis presents challenges for psychiatry. The degree of psychological trauma and need for treatment for those with extended stays in refugee camps in Turkey and other countries is well described. What is less well developed is an understanding of the psychological needs of populations in transit and how best to address these needs. Observations in this report are based on the experience of the authors during November and December 2015 on beaches at Molivos, refugee camps in Lesbos and Chios and the Macedonian border. **Results:** 1) Few overt psychiatric complaints—most common was panic attack. Deep psychological distress was commonly masked by somatization; 2) Detailed psychiatric evaluation was difficult due to language barriers and "migration mentality'" 3) Interruption of migration mode can cause increased medical illness, psychological distress, hopelessness and violence; 4) Unlike disasters such as the earthquake in Haiti, which was a discrete event affecting a predominantly static population, the Syrian refugee crisis is a dynamic event affecting a migratory population that cannot be served by traditional models of diagnosis and treatment of psychopathology nor measured by the usual metric of number of patients seen and treated; 5) Psychological needs may be best addressed as issues of population health and social psychiatry addressing deficiency needs as described by Maslow; 6) Interventions that shift from a treatment model to models fostering hope and resilience can support migration mindset and enhance mental health; 7) Training medical and nonmedical volunteers to administer psychological first aid would improve psychological well-being of both refugee and volunteer populations; 8) There are complaints that large number of NGOs and inexperienced volunteers can place stress on an already overwhelmed system. However, volunteers may provide inoculation against xenophobia in their home countries and may be the best educators of a population that could otherwise be isolated from world events and exposed only to radicalizing reports by media. **Conclusion:** Mental health is part of any disaster and cannot be ignored. Planning, assessment and delivery of services must be addressed as problems of the whole community and account for both individuals' and communities' needs. In many cases, communities have experienced disruptions of safety and livelihood over extended periods of time, and

the response must recognize and support those needs. The implication for social psychiatry is the extent to which sectarian violence and the dilemma of the refugees infects our response to the crisis. In the aftermath of the Paris attacks, Western societies face the additional dilemma of protecting refugees while managing overt hostility toward the very individuals in need of assistance.

NO. 41

RECRUITMENT, IDEOLOGY AND STRATEGIC PREVENTION IN RADICAL EXTREMISM: A LITERARY REVIEW

Lead Author: Aida Spahic Mihajlovic, M.D., M.S.
Co-Author(s): Cody Krueger, B.A., Amanda King, B.A., Kristina Mihajlovic, B.A., B.M.S.

SUMMARY:
Radical extremism has become an increasingly significant issue facing our society today. Groups ranging from the Islamic State of Iraq and the Levant (ISIL) to the Aryan Nation continue to grow in power and have an influence both abroad and here in the United States. This review aims to understand the recruitment strategies and ideologies used by radical extremist groups in an attempt to develop effective opposition and preventive strategies that can be implemented in various clinical applications. Eleven articles were read by five people. Inclusion criteria for this research included keywords counternarrative, terrorism, Islam, White Power, radical extremism and prevention of radicalization. Exclusion criteria included articles written by members of radical extremist groups themselves, as well as articles written before September 11, 2001. Based off the 11 articles, individual anti-radicalization counter-measures should focus on countering the perceptions of victimization, undermining the "champion" narrative and emphasizing nonviolent alternatives. In the clinical setting, one should provide options that can fulfill the psychological needs of closure, sense of identity/belonging and personal significance. Understanding these various strategies will allow for improved patient care, particularly with adolescent psychiatric behavior within at-risk community members.

NO. 42

SEASONAL VARIATION IN SLEEP DURATION IN THE OLD ORDER AMISH IN RELATION TO PREVIOUSLY REPORTED DATA IN PREINDUSTRIAL AND "MODERN" SOCIETIES

Lead Author: Hira Mohyuddin
Co-Author(s): Gagan V. Nijjar, M.D., Ameya Amritwar, M.D., Uttam K. Raheja, M.D., Iqra Mohyuddin, Theresa M. Roomet, B.S.N., R.N., Sonia Postolache, Mary A. Pavlovitch, M.P.H., Patrick Donnelly, Nancy M. Weitzel, Mary H. Morrissey, B.S.N., R.N., Aamar Sleemi, M.D., Teodor T. Postolache, M.D.

SUMMARY:
Background: Despite similar average sleep duration, there is a dissimilar seasonal variation in sleep duration between preindustrial societies and "modern" populations, with greater differences between winter and summer in the former than in the latter. The most common explanation for this difference has been the use of bright electric light, flattening the effect of seasonal variation in day length. For this reason, we measured the winter-summer difference in sleep duration in the Old Order Amish, a predominantly agrarian population that does not use network electric light at home. Thus, based on light exposure data, we hypothesized that seasonal variation in sleep duration in Old Order Amish will be more similar to preindustrial populations than to "modern" populations. **Methods:** Two observational approaches were used and related to previous published data on preindustrial and modern populations. In the first, we measured rest-activity during the summer and winter using Actiwatch Spectrum (Philips Respironics, Bend, OR) in 40 Amish aged 25–74, 26 female and 14 male. We also analyzed data from 1,265 Amish participants, 544 male and 721 female (21–99 years old) who reported seasonal variation in sleep on the Seasonal Pattern Assessment Questionnaire (SPAQ) and compared summer and winter averages with paired t-tests and ANCOVAs adjusting for age and gender. We then related our results and another actigraphic study in the Amish to studies in preindustrial and modern populations. **Results:** We found a seasonal difference of 0.35 hours based on the actigraphic data, which is slightly higher than the 0.24 hours previously reported in the Old Order Amish and very similar to data in modern societies (0.30 hours). These differences are three-fold shorter than actigraphic data recently reported in preindustrial populations, i.e., 0.88 hours (the San) and 0.93 hours (the Tsimane). Incidentally, in contrast to actigraphy, the SPAQ self-report-based summer-winter changes in sleep duration were larger (0.82 hours, $p<0.001$), more similar to variations reported in preindustrial than in "modern"

societies. **Conclusion:** Greater similarities with "modern" societies on objective estimates of seasonal sleep variation suggest that artificial light of lower intensity than what is routinely generated by network electric light is sufficient to dent the impact of seasonal variation in natural day-length on sleep duration. Alternatively, other factors in artificial microclimates, such as indoor temperature, may play a role in decreasing seasonal variation in sleep duration. The study was supported by NIH grant K18MH093940 (PI Postolache) and the University of Maryland Amish Research Clinic, Lancaster, PA.

NO. 43

EFFECTIVENESS OF URGENT OUTPATIENT SERVICES IN REDUCING SCHOOL-REFERRED EMERGENCY ROOM MENTAL HEALTH VISITS

Lead Author: Douna Montazeralghaem, M.D.
Co-Author(s): George Alvarado, M.D., Logan Hegg, Psy.D., Anne Buchanan, D.O., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Overutilization of the emergency room (ER) to address nonurgent child mental health problems is a significant public health concern, often fueled by inadequate access to community-based child mental health resources. We have previously shown that schools are often a significant source of referral rates to ERs for child mental health evaluations and "clearance". However, regular pediatric emergency departments (EDs) may not be the most effective location to provide these evaluations, due to a general lack of child-trained mental health specialists (e.g., child psychiatrists and child clinical psychologists), long wait times and poor connections to follow-up care. We hypothesized that an urgent evaluation service (UES) providing same-day, clinic-based assessments would be an innovative and viable alternative to the ER and thereby aid in reducing referral rates. **Objective:** 1) Examine the effectiveness of a clinic-based intervention, the UES, at reducing ER utilization; 2) Explore demographic and clinical features of patients referred to the service; and 3) Help guide decisions about community-based service planning and implementation. **Methods:** For this IRB-approved prospective study, 15 schools were identified as high-ER utilizers of our local ER. School-based support teams were invited to a two-hour in-service to review referral data and procedures and to launch the UES, an outpatient same-day service for school-referred youth. Comparison was made between the number and characteristics of school ER referrals for psychiatric evaluation and UES outpatient visits over two consecutive school years: 2013 (prior to the start of UES) and 2014 (after UES initiation). **Results:** School referrals comprised 44% (n=185) of all consults seen in January to June of 2013, compared to only 31% (n=93) in 2014, $t(672)=3.5678$, $p<0.0004$, $d=0.27$. The actual number of consults dropped by 50%, with 92 fewer referred in 2014. A comparable drop was not observed from other sources. The UES saw a total of 69 cases, with the majority sent for evaluation of suicidal ideation or self-injury, 78% having no current outpatient treatment at the time and only one case requiring further care in the ER. Data for the following school year have been collected and are currently under analysis. **Conclusion:** A same-day, clinic-based urgent evaluation service appears to be a promising alternative to the ER for schools faced with students in crisis. Aside from the impact on ER utilization, there is potential for qualitative gains such as cross-system communication, direct contact and patient engagement. Further, parents and children benefit from being seen in a setting that is more appropriate and less threatening than a general pediatric ER for addressing mental health concerns. Our data are vital to informing and structuring future policy, funding and service implementation efforts, with the specific goal of preventing unnecessary ER visits while enhancing access to care.

NO. 44

MAGNETIC RESONANCE SPECTROSCOPY IDENTIFIES A TREATMENT-RESISTANT "HYPERGLUTAMATERGIC" OBSESSIVE-COMPULSIVE DISORDER SUBTYPE

Lead Author: Ross J. Mudgway
Co-Author(s): Susan N. Chang, Christopher P. Laughlin, Gerhard S. Hellemann, Joseph O'Neill, Ph.D., John C. Piacentini, Ph.D., James T. McCracken, M.D., Erika L. Nurmi, M.D., Ph.D.

SUMMARY:

Background: Obsessive-compulsive disorder (OCD) affects more than three million individuals in the U.S. and is characterized by intrusive thoughts and urges as well as repetitive behaviors that serve as a source of often-debilitating anxiety. More than 40% of patients diagnosed with OCD respond inadequately to treatment. Biological links that could inform treatment approaches are sorely needed. Since current brain models of OCD strongly implicate glutamatergic dysfunction, we tested brain

glutamate (Glu) levels measured by magnetic resonance spectroscopy imaging (MRSI) in children undergoing cognitive behavior therapy for OCD. We hypothesized that baseline Glu level would moderate treatment response and that Glu changes would parallel improvement. Further, we investigated whether genetic variation in glutamatergic signaling candidates could help explain variability in OCD diagnosis, Glu levels and treatment response outcomes. **Methods:** MRSI data were collected before and after treatment from 60 children with OCD and 35 matched healthy controls. Clinical assessment measures were obtained at each visit. Genomic DNA was extracted from blood, and genotyping was performed using the Life Technologies TaqMan platform with amplification. Genes influencing glutamatergic and serotonergic signaling were selected for analysis based on prior reports of association with OCD and MRS phenotypes. **Results:** Subjects with low MRS Glu in the ventral posterior cingulate cortex (vPCC) were twice as likely to respond (89% vs. 45%) and seven times as likely to remit (67% vs. 9%) with CBT treatment. Similarly, youth with low versus high baseline Glu showed a 47% greater reduction in core OCD symptoms. Additionally, CBT resulted in a reduction of Glu over time. Despite a small sample size, we replicated previously published genetic association with OCD at BDNF (rs6265), HTR2A (rs6311), SLC1A1 (rs3933331), and GRIN2B (rs1806195) at trend levels. COMT (rs4680, p=0.028) was associated with low posterior cingulate (PCC) Glu. In rs3794087 common allele homozygotes at the glial Glu transporter (SLC1A2), high PCC Glu was associated with treatment resistance, whereas in minor allele carriers, no association with treatment response was observed (p=0.016). Initial replication from a parallel adult OCD MRSI study is promising. **Conclusion:** We identified high cingulate Glu as a marker for poor CBT response. This data suggest that the subset of patients with evidence of "hyperglutamatergic OCD" may benefit from a targeted treatment to down-modulate Glu. Understanding the pharmacogenomic factors surrounding treatment response and brain metabolism will lead to strategies to individualize treatment matching and achieve more effective therapeutics.

NO. 45

ASSOCIATION OF VASOMOTOR SYMPTOMS WITH DEPRESSION, ANXIETY, STRESS AND METABOLIC SYNDROME IN KOREAN PERI- AND POSTMENOPAUSAL WOMEN

Lead Author: Yoonmin Nam
Co-Author(s): Sook-Haeng Joe, M.D., Ph.D.

SUMMARY:

Objective: Investigate the association of vasomotor symptoms and psychiatric problems such as depression, anxiety, stress and the risk of metabolic syndrome in peri- and postmenopausal Korean women. **Methods:** This study included a total of 1,054 Korean peri- and postmenopausal women who were attending routine health checkups from 16 branch offices of the Korea Association of Health Promotion. We carried out a cross-sectional study. Self-reported questionnaires and blood laboratory tests were performed. The Menopausal Rating Scale was used to assess vasomotor symptoms, and the Beck Depression Inventory, State-Trait Anxiety Inventory (STAI) and Brief Encounter Psychosocial Instrument–Korean version (BEPSI-K) were used to assess depression, anxiety and stress. Metabolic syndrome was defined by the criteria proposed by the National Cholesterol Education Program Adult Treatment Panel III. Associations between vasomotor symptoms, depression, anxiety and stress were analyzed using linear by linear association and logistic regression analysis. Associations between vasomotor symptoms and risk of metabolic syndrome were analyzed using logistic regression analysis. **Results:** Among 1,054 peri- and postmenopausal women, 680 (64.5%) reported the presence of vasomotor symptoms. On multiple logistic regression analysis, vasomotor symptoms were associated with depression (OR=1.76, 95% CI [1.04, 2.99], p=0.036), stress (OR=2.64, 95% CI [1.32, 5.29], p=0.006), and fasting plasma glucose of at least 100mg/dL or current use of diabetes mellitus drugs (OR=1.63, 95% CI [1.08, 2.46], p=0.019). The prevalence of depression (BDI>16) and stress (BEPSI-K>2.4) increased, as the severity of vasomotor symptoms increased. **Conclusion:** In midlife women, not only the presence but also the severity of vasomotor symptoms is associated with depression and stress. We also found that fasting plasma glucose being high enough to match the criteria of metabolic syndrome is related to vasomotor symptoms too. Although the causality of such associations is not known because of the cross-sectional nature of the data, these relationships can be helpful to identify potential risks for vasomotor symptoms. **Keywords:** Vasomotor Symptoms, Depression, Anxiety, Stress, Metabolic Syndrome

NO. 46

PHARMACOKINETIC PHARMACOGENETIC PRESCRIBING GUIDELINES FOR ANTIDEPRESSANTS: A TEMPLATE FOR PSYCHIATRIC PRECISION MEDICINE

Lead Author: Malik Nassan, M.B.B.S.
Co-Author(s): Wayne T. Nicholson, M.D., Pharm.D., Michelle A. Elliott, M.D., Carolyn R. Vitek, John L. Black, M.D., Mark A. Frye, M.D.

SUMMARY:

Antidepressants are commonly prescribed medications in the United States, and there is increasing interest in individualizing treatment selection for more than 20 FDA-approved treatments for major depressive disorder. Providing greater precision to pharmacotherapy recommendations for individual patients beyond the large-scale clinical trials evidence base can potentially reduce side effect toxicity profile and increase response rates and overall effectiveness. It is increasingly recognized that genetic variation may contribute to this differential risk/benefit ratio and thus provides a unique opportunity to develop pharmacogenetic guidelines to psychiatry. Key studies and concepts that review the rationale for cytochrome p450, CYP2D6 and CYP2C19 genetic testing can be delineated by serum levels, adverse events and clinical outcome measures (i.e., antidepressant response). In this poster, we report the evidence that contributed to the implementation of pharmacokinetic pharmacogenetic guidelines for antidepressants primarily metabolized by CYP2D6 and CYP2C19.

NO. 47

IMMEDIATE MENTAL HEALTH AND PSYCHOSOCIAL PROBLEMS AMONG VICTIMS OF THE MEGA EARTHQUAKE IN NEPAL: A CROSS-SECTIONAL STUDY

Lead Author: Hitekshya Nepal, M.D.
Co-Author(s): Pawan Sharma, M.D., Eric Black, M.D., Mukul Bhattarai, M.D.

SUMMARY:

Background: Although earthquakes are among the most common and devastating natural disasters, relatively little attention has been paid to their mental health consequences and associated risk factors. Immediately after the recent earthquake in Nepal, the risk for mental health and psychosocial problems has substantially increased among the affected people whose preexisting emotional needs have been unattended. **Objective:** Understand the psychological distress during unexpected natural disasters like earthquakes; Explore the mental health and psychosocial problems in the mega earthquake affecting three districts of Nepal; Demonstrate the need for immediate psychological first aid relief during these disasters. **Methods:** The study population was a total of 412 patients attending an emergency mental health camp conducted during the two weeks after the mega earthquake in three different affected districts of Nepal. The patients were first screened by the general medical health camp using exclusion and inclusion criteria. Each patient was then asked to list the symptoms that they developed as a consequence of the earthquake in the local language after taking sociodemographic details. The data were then analyzed. No syndromal diagnosis was made for the study. **Results:** Out of 412 respondents, the majority was females (58.65%), and most patients were in the age groups between 25 and 35. Among the symptoms, fearfulness, shaking, sleep disturbances, avoidance and worries were consistently reported in a majority of the patients. The other rare symptoms reported were mutism, suicidal ideation, bed wetting and isolation. Women, children and the elderly were the most severely affected age groups. **Conclusion:** Mental health and psychosocial problems immediately after humanitarian crises are common but transient. Different positive coping mechanisms, access to social support networks, family and community support, talking with friends, and engaging in work or religious activities help minimize the psychological problems. Lack of such support might result in long-term consequences. The psychological first aid provided by Disaster Psychiatry Outreach was also able to reduce the initial distress and foster short- and long-term adaptive functioning. A need exists for strengthening the psychological first aid system in disaster-prone regions, especially in developing countries like Nepal.

NO. 48

IMPORTANCE AND UTILIZATION OF FAMILY THERAPY IN TRAINING: RESIDENT PERSPECTIVES

Lead Author: Sarah A. Nguyen, M.D.
Co-Author(s): Daniel Patterson, M.D., Madeleine S. Abrams, L.C.S.W., Andrea Weiss, M.D.

SUMMARY:

Background: All "individual" problems, such as mood, psychotic and cognitive disorders, exist in a relational context. The advent of family therapy brought attention to the individual in the context of the family and the importance of family and larger systems. Understanding family systems also has the potential to enhance the power of individual therapy, yet a combination of treatments is often underutilized in residency training. Training in family psychotherapy has been difficult to integrate into psychiatric residency programs for several reasons, including conflicting paradigms, turf battles, constraints of time and money, and limited resource and supervisor availability. Currently, only eight residency programs nationwide, including Montefiore Medical Center (MMC), have been recognized as providing in-depth training in family therapy. Residents at MMC receive scheduled psychodynamic supervision in couples and family therapy as well as engage in a curriculum including courses, seminars and electives focusing on couples and family therapy in all four years of training. Though there are some published papers on the importance of family therapy in residency training, there is minimal data published on how residents view the importance of learning family therapy. **Methods:** This poster provides a PGY-4 perspective on the importance family therapy training has in enhancing the treatment of "individual" patients by deepening the resident's understanding of the family and systems context in which said individual exists. To this end, several case studies involving in-depth family therapy undertaken by residents throughout the four years of residency will be reviewed. Survey results from residents across four years of training assessing their view of the importance of family therapy training in their development will also be presented. **Results:** A more extensive understanding of family therapy is essential to improvement of treatment outcomes and family/caregiver burden from an individual, family and medical approach, as well as support appropriate interventions for patients and caregivers. **Discussion:** In-depth training in family therapy provides a deeper understanding and cultivates a curiosity and self-awareness of family dynamics. An understanding of the resident's own family, cultural and social context serves as the springboard to broaden the individual biopsychosocial conceptualization. This initial personal development is an essential turning point for continued professional development, as the progression of each year of training allows for a greater appreciation of the complexity of the individual within the family and larger systems context. Finding ways to integrate family therapy into routine patient care during residency training may enhance opportunities for residents to develop skills to deliver a more comprehensive and effective multimodal treatment paradigm that incorporates family and systems perspectives.

NO. 49

HOSPITAL STAFF BURNOUT AND FATIGUE AT A MILITARY MEDICAL CENTER DURING GOVERNMENT SHUTDOWN

Lead Author: Samuel A. Nicolas, M.D.
Co-Author(s): Eileen Delaney, Ph.D., Scott Roesch, Ph.D., Martha Sanders, M.A., Jennifer Webb-Murphy, Ph.D., Jeffrey Millegan, M.D., M.P.H.

SUMMARY:

Background: Burnout and fatigue in the health care setting can significantly impact provider well-being and patient safety. Military medical centers have unique occupational stressors, and it is important to determine factors that influence burnout and fatigue in this environment. **Methods:** A Cross-sectional survey of 1,000 health care staff at a military medical center in 2014 collected information including the Maslach Burnout Survey (MBI), validated measures of fatigue (F-SF8a) and job satisfaction (Abridged Job Descriptive Index), perception of satisfaction/frustration of various aspects of work environment, demographics, and work-/military-specific variables including the government shutdown/furlough in 2013. Trends in MBI were determined from a previous survey on providers at the same medical center in 2012. Multiple regression analysis was performed to determine factors that impact burnout and fatigue. **Results:** 359 providers, 238 nurses and 403 others were surveyed. Mean emotional exhaustion (EE) was 21.9 (SD=11.9), depersonalization (DEP) was 5.2 (SD=5.3), personal achievement (PA) was 35.7 (SD=9.3), and fatigue was 12.3 (SD=8.3). Plurality of the 2014 sample fell into the low category for EE and DEP and high category for PA. Comparing provider responses in the 2014 survey with the 2012 survey, EE increased by 9.6% (p=0.02) over that time period. DEP and PA had mildly worsened, but change was not statistically significant. For the 2014 survey, higher burnout and fatigue were associated with lower overall job satisfaction and less satisfaction with staffing, electronic medical records and work-life balance, as well as with less engagement in physical activity. Active duty military staff showed significantly higher

burnout and fatigue relative to civilian staff. Although no significant differences in burnout, fatigue or job satisfaction were found in those furloughed compared to those not furloughed, those who did not feel support from leadership during the furlough had significantly higher EE and lower job satisfaction scores. Of the civilian staff, there were significantly higher DEP and fatigue scores for those who did not feel support during the furlough. **Conclusion:** Our results support the conclusion that common job stressors, chronically experienced, are significantly associated with burnout and fatigue, which are known to impact patient care. Balancing work with healthy personal activities such as exercise can be protective. We recommend regular surveys of burnout and fatigue levels in the workforce, along with creation of staff wellness programs, such as meditation or yoga classes, that can provide protective mental health support. Additionally, while objective events (e.g., furlough) are not directly related to burnout or fatigue, the perception of leadership support during these events has a significant impact. Training effective leaders at every level may mitigate burnout and fatigue during stressful events.

NO. 50

ASSOCIATIONS BETWEEN METABOLIC AND CARDIOVASCULAR RISK FACTORS AND NITRITE LEVELS IN THE OLD ORDER AMISH

Lead Author: Gursharon Nijjar, M.D.
Co-Author(s): Mary Pavlovich, M.P.H., Dietmar Fuchs, Ph.D., Braxton D. Mitchell, Ph.D., M.P.H., Alan R. Shuldiner, M.D., Ashwin J. Mathai, M.D., Teodor T. Postolache, M.D.

SUMMARY:

Background: The Old Order Amish in Lancaster, PA, are known for their agrarian and homogenous lifestyle, with a diet potentially high in nitrate/nitrite due to the high consumption of cured meats, sausages, fresh green vegetables and well water. Although recent studies have shown large amounts of plasma NOx (nitrate plus nitrite) in patients with metabolic syndrome (MetS) (one of the major cardiovascular risk factors, especially in individuals with mental illness), the evidence is inconsistent. We thus investigated associations between plasma nitrite levels and BMI, diabetes, cholesterol and MetS in Old Order Amish, known for their relatively homogenous lifestyle and low incidence of substance abuse. **Methods:** Fasting nitrite levels from 116 Old Order Amish from Lancaster, PA, mean age 54.02 (SD=11.88, 91 women, 25 men) were analyzed in relationship to body weight, obesity status, fasting glucose, fasting lipid profile, waist circumference, hip circumference, blood pressure and MetS using linear and logistic regressions. **Results:** The subjects had a fasting mean blood nitrite value of 9.522 micromoles/L (SD=7.53). After adjusting for age and sex, we found a significantly positive relationship between nitrites and BMI and being overweight or obese, and even after additional adjustment for BMI, a positive correlation persisted with MetS ($p<0.001$). We found a positive relationship between plasma nitrite levels and triglycerides and fasting glucose and a negative relationship with high-density lipoprotein (HDL) levels ($p<0.0001$ for all three analyses) through a crude and multivariate analysis. **Conclusion:** The results confirmed an association between nitrites, MetS and individual metabolic risk factors for cardiovascular risk. Future studies are needed to replicate these results, account for depression and inflammation, and better identify potential targets for prevention and treatment. This research was supported by a NORC exploratory grant (PI Postolache), offspring of the parent grant P30 DK072488 and the University of Maryland, Joint Institute for Food Safety and Applied Nutrition JIFSAN/ FDA cooperative agreement FDU.001418.

NO. 51

PERSONALITY, CORTISOL AND COGNITION IN NONDEMENTED SUBJECTS: A POPULATION-BASED STUDY

Lead Author: Sami Ouanes, M.D.
Co-Author(s): Enrique Castelao, Armin von Gunten, Martin Preisig, Julius Popp

SUMMARY:

Background: Certain personality traits have been associated, on one hand, with elevated cortisol levels and, on the other hand, with poorer cognitive performance. However, previous studies could not disentangle the effects of premorbid personality traits from personality changes accompanying cognitive decline. At the same time, several studies highlighted the association between high cortisol and poor cognitive functioning. In this study, we hypothesized that personality might explain the association between cortisol and cognition. **Objective:** Examine the links between salivary cortisol, cognitive performance and personality traits in a population of nondemented individuals older than 60. **Methods:** A cross-sectional analysis was

conducted using data from Colaus/PsyColaus, a population-based study involving 6,733 Lausanne residents. Salivary cortisol samples (upon waking, 30 minutes after waking, at 11am and at 8pm) were obtained from 799 nondemented participants aged at least 60. We calculated cortisol area under the curve (AUC). Global cognitive performance was evaluated using the Mini Mental State Examination (MMSE), and a comprehensive neuropsychological test battery was used to determine the clinical dementia rating (CDR). Personality traits were assessed using the NEO Five-Factor Inventory (NEO-FFI). To make sure these traits were stable and not due to potential personality changes accompanying cognitive decline, a comparison was made with a personality assessment performed six years earlier. **Results:** Personality changes over the six-year period were not significant. Out of the five traits, neuroticism in men (p=0.014, β=0.025, 95% Confidence Interval [CI [0.005, 0.045]) and agreeableness in women (p=0.003, β=−0.013, 95% CI [−0.022, −0.005]) were associated with the MMSE score, controlling for age, education and depression. No association was found between personality traits and the CDR. Multiple regression analysis showed that cortisol AUC was associated negatively with extraversion (p=0.006, β=−2.781, 95% CI [−4.776, −0.785]) and positively with openness (p=0.009, β=2.366, 95% CI [0.590, 4.143]) after controlling for age, sex, depression and body mass index (BMI). The MMSE score was negatively associated with cortisol AUC (after controlling for age, sex, BMI, education and depression, p=0.016, β=−0.001, 95% CI [−0.002, 0.000]), independent of personality traits. **Conclusion:** Certain personality traits (low neuroticism in men, high agreeableness in women) might be associated with cognitive performance, while others (high extraversion, low openness) might be associated with increased cortisol. Our study suggests that these effects are associated with stable personality traits rather than potential personality changes accompanying cognitive decline. Personality traits did not seem to influence the association between cortisol and cognition, suggesting that this association is likely explained by other factors yet to be elucidated.

NO. 52

NIH TOOLBOX DIMENSIONAL CHANGE CARD SORT TEST IS NEGATIVELY CORRELATED WITH PLASMA CYTOKINES IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Ruchirkumar Arvind Patel, M.B.B.S.

Co-Author(s): Sumana Goddu, Satyajit Mohite, Ramandeep Kahlon, Titilayo Makanjuola, Osarhiemen Aimienwanu, Hema Venigalla, Gurtej Mann, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:

Background: Immune activation with associated inflammation has been implicated in the pathophysiology of schizophrenia. Plasma inflammatory markers have also been associated with poorer cognitive performance in patients with schizophrenia. However, the correlation of cognition assessed with the NIH Toolbox Dimensional Change Card Sort Test (DCCS) with plasma inflammatory markers has not been assessed. We have now evaluated the correlation of DCCS with plasma cytokines in patients with schizophrenia. **Methods:** Ten adult patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) were recruited from the inpatient unit. Fasting plasma interferon gamma (IFN-Î³), interleukin 1 beta (IL-1β), interleukin 6 (IL-6) and tumor necrosis factor alpha (TNF-α) were measured with ELISA in all the patients. DCCS, a measure of cognitive flexibility, was administered on all the participants on the same day of blood draw. We calculated Spearman rank correlations between plasma cytokines and DCCS (fully adjusted scores). **Results:** DCCS was negatively correlated with IFN-Î³ (ρ=−0.72, p=0.028), IL-1β (ρ=−0.78, p=0.014) and IL-6 (ρ=−0.72, p=0.029), but not with TNF-α. **Conclusion:** Our preliminary results suggest that plasma levels of inflammatory cytokines are associated with a poorer cognitive function, specifically cognitive flexibility, in patients with schizophrenia. Our findings provide additional support and basis for the evaluation of novel neuroimmune modulators for improving cognition in schizophrenia and for assessing severity and treatment progress employing the NIH toolbox cognition battery test. **Keywords:** Schizophrenia, Inflammation, Cognition, Cytokines

NO. 53

THE ASSESSMENT OF HEDONIC CAPACITY IN DEPRESSED AND HEALTHY POPULATIONS: THE SNAITH-HAMILTON PLEASURE SCALE MODIFIED FOR CLINICIAN ADMINISTRATION

Lead Author: Roderic Pettigrew, B.S.

Co-Author(s): Rezvan Ameli, Ph.D., David A. Luckenbaugh, M.A., Lawrence Park, M.D., Carlos A. Zarate, Jr., M.D.

SUMMARY:

Background: Anhedonia, the inability to experience pleasure, is a central component of clinical depression. Assessment of depression in clinical trials includes clinician-administered tools supplemented by self-report measures. Measures of hedonic capacity are primarily self-administered. We have recently developed a clinician-administered version of the Snaith-Hamilton Pleasure Scale (SHAPS) to understand the differences and similarities between self- and clinician-administered versions and to also compare patient and controls groups. **Methods:** A sample of currently depressed patients (n=19) and healthy control subjects (n=19) was studied in the Clinical Center of the National Institutes of Health. Study participants were evaluated using five measures: the SHAPS, SHAPS-C (clinician version), Temporal Experience of Pleasure Scale (TEPS), Inventory of Depressive Symptomatology Self-Rated version (IDS-SR) and Clinician-Rated version (IDS-C) to characterize the level of anhedonia and depression. An independent samples t-test was used to compare control and depressed subjects on the SHAPS and SHAPS-C. Pearson's correlations were calculated to examine the relationship between the SHAPS and SHAPS-C in the patient group. **Results:** The SHAPS and SHAPS-C scores of patient and control groups were significantly different ($p<0.001$), which suggests that these measures are able to distinguish normal and pathological levels of hedonic capacity. In the patient group, the SHAPS and SHAPS-C were moderately correlated ($r=0.54$), which suggests that while the two measures are related, they may provide some different information on hedonic tone. **Conclusion:** This investigation suggests that the SHAPS-C may offer new information to understanding hedonic capacity over that provided by the self-reported SHAPS. The patients reported greater levels of anhedonia compared to the clinician assessment. This is consistent with previous research that supports clinician administration in patient groups, suggesting that the greater the pathology in the patient groups, the more the self and clinician administrations differ from one another. Future investigations may examine the self- and clinician-rated forms more closely to better understand the uniqueness and contribution of both scales in the measurement of anhedonia in patient groups.

NO. 54

RECURRENT SELF-INJURIOUS BEHAVIOR WITH SUBCUTANEOUS FOREIGN BODY INSERTION IN A TEENAGER: AN INTERESTING CASE STUDY

Poster Presenter:Diana Mungall Robinson, M.D.
Lead Author: Steven R. Phillips, D.O.
Co-Author(s): Dylan Russel, B.S., Joshua Smith, M.D., Michele Vargas, M.D., Vishal Madaan, M.D., Jim B. Tucker, M.D.

SUMMARY:

We describe the case of a 17-year-old male with a past psychiatric history of bipolar disorder, attention-deficit/hyperactivity disorder, conduct disorder and marijuana use disorder who presented to the emergency department for surgical consultation of a left forearm abscess secondary to a foreign body implanted in a self-inflicted wound. Psychiatry was consulted for suicide risk assessment after the patient endorsed suicidal ideation to hospital staff. He had a several-year history of nonsuicidal self-injurious behavior via cutting and insertion of foreign objects into the subcutaneous tissue that has required surgical management. Coming from a juvenile detention center, the patient reported worsening thoughts of self-harm and was unable to actively participate in safety planning. He endorsed a plan, but was unwilling to discuss it. He had a suicide attempt two days prior when he tied an elastic cord around his neck and intentionally put foreign objects into his self-inflicted wound. When describing why he enjoys cutting and placing objects in his wounds, he described that it was pleasurable, often to the point of sexual gratification and ejaculation. He reported symptoms of mood lability, decreased sleep, racing thoughts and poor appetite with occasional self-induced emesis. He denied anhedonia, guilt and concentration difficulties, and no delusions were elicited. He endorsed homicidal ideation though denied a plan or intent. He made threatening comments about wanting to injure a nearby patient, wanting to "poke out his eyeballs and eat them." The patient endorsed intermittent auditory hallucinations. The patient was admitted to pediatric surgery in bilateral upper limb restraints with a detention facility staff member present at all times. On hospital day 1, he underwent incision and drainage, and two pieces of Styrofoam were removed. On hospital day 2, he was shouting racial slurs, threatening physical violence and attempting to bite himself. He required multiple security guards and nurses to physically restrain him and eventually required physical as well as chemical restraints. Afterward, he reported remorse about his past

behaviors, being an absent father to his daughter and an abusive boyfriend, and cutting after a 30-day abstinence period. He expressed a desire to take control of his life and eventually remove himself from institutional care. He made strong eye contact and was tearful. However, he had told a chaplain that he would lie to the psychiatric team in order to manipulate his discharge disposition. On hospital day 4, another incision and drainage removed more Styrofoam and a Q-tip with purulent discharge. On hospital day 5, the patient had several behavioral emergencies, including threatening to swallow a needle and plastic utensils. Thereafter, he was transferred to a state psychiatric hospital for long-term hospitalization. We review the diagnostic formulation, differential diagnoses and management issues in this poster.

NO. 55

ADMISSION CRISIS PREVENTION PLAN: A TOOL FOR DE-ESCALATION IN AN ACUTE CARE ADULT PSYCHIATRIC SETTING

Lead Author: Nandita Puchakayala, M.B.B.S.
Co-Author(s): Logan Hegg, Psy.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: The use of restraints as a method to control agitation on inpatient mental health units has often resulted in negative outcomes to both patients and staff during the process of applying these techniques. The process can itself be traumatizing to certain individuals and alone does not help in developing patient self-management. Additionally, patient-to-patient and patient-to-staff assaults and self-injurious behaviors can lead to injury/possible fatalities to either of them. Thus, there is a need to find alternative approaches to mitigate/prevent some of these behaviors. Given that the prevalence of trauma for psychiatric inpatients may be as high as 90%, preplanning around triggers and effective calming strategies aligns such safety measures with the tenets of trauma-informed care. The Joint Commission and the New York State Office of Mental Health suggests the use of behavior plans as one of the “best practices” for care in preventing crisis events and further reducing restraints on the inpatient unit. **Objective:** Review the development of a crisis prevention plan (CPP) protocol on admission that helps to identify triggers/early warning signs leading to a crisis and calming strategies, and further develop patient self-management on an acute care psychiatric unit in an urban community hospital setting. **Methods:** The CPP protocol development will take place in the following phases: 1) A multidisciplinary action committee (nurses, MHW, activity therapist, psychiatric residents, attending psychologist, attending psychiatrist) develops CPP education and implementation workflow; 2) Education of staff involved in CPP usage; 3) Review and modification of the CPP during debriefs after a crisis; 4) Implementation of the CPP on acute care psychiatric units and use of rapid PDSA (plan-do-study-act) cycles to refine both the document and process of using it; 5) Data collection before and after CPP implementation on patient safety (IM PRNs, incident reports, physical restraints, patient satisfaction surveys) and unit safety (staff injuries, staff perception of safety and support); 6) Address challenges and solutions to CPP implementation; 7) Systemic integration of the workflow and plans as sustainable parts of unit operation. **Conclusion:** The implementation of a CPP into the workflow of acute care psychiatric units is an important step toward refining inpatient-level care toward a trauma-informed, patient-centered, strengths-based approach that is in line with state and federal “best practices." Its integration into routine admission assessment processes would send an important message to the multidisciplinary staff, as well as all patients, of the importance of patient and staff safety, insight and self-regulation. As treatment teams strive for the least restrictive but most effective and safest interventions with patients at all phases of mental health treatment, the CPP is an important and valuable tool for units to consider implementing.

NO. 56

EVALUATION AND MANAGEMENT OF FUNCTIONAL NEUROLOGICAL SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS

Lead Author: Naema Qureshi, M.D.
Co-Author(s): Laura Safar, M.D.

SUMMARY:

Background: Functional or conversion symptoms, classified in the *DSM-5* under Somatic Symptom Disorder (SSD), are prevalent in patients with confirmed neurological conditions. Psychiatric comorbidity is common in multiple sclerosis (MS). In addition to depression and other conditions, anecdotal evidence from seasoned MS specialists suggest that functional neurological symptoms and SSD may also be highly prevalent in MS, but the level

of evidence and guidelines in this area are very limited. In this context, patients with MS frequently present with somatic or neurological symptoms that raise the question of a functional etiology; the ensuing evaluation is challenging, and there is little to guide the clinician in the active management of a case. **Objective:** Review the current state of scientific knowledge regarding the topic of functional symptoms in patients with established MS and summarize our findings into a set of guidelines that clinicians can use in their assessment and management of these patients. **Methods:** We conducted a PubMed search combining multiple sclerosis with the keywords somatization, conversion disorder, pseudo-relapse, pseudo-flare, factitious and Munchausen and summarized the current literature. We reported representative cases of patients with an established MS diagnosis and comorbid functional neurological disorders gathered from the collective experience of a multidisciplinary group of MS specialists. The cases demonstrate four different presentations of functional symptoms in MS: 1) Classic conversion disorder with sensory and motor symptoms; 2) Anxiety and somatic hypervigilance with multiple somatic symptoms; 3) Pain disorder; and 4) Cogniform presentation. We convened the approach of these MS experts into a set of guidelines to be used in assessment and management of this patient population. **Results:** The level of scientific evidence is limited to case reports and case series. There is a lack of evidence-based guidelines and a need for increased awareness about this problem. Patients may be misdiagnosed as having MS relapses and receive unnecessary medical treatments that can cause iatrogenic complications, while their underlying psychiatric illness may go untreated. The assessment and management of these patients should be interdisciplinary whenever possible. Aspects of history, mental status and neurological exam may aid in differential diagnosis. Brain imaging may aid in some cases, but has limitations. Education of patients and their engagement in this diagnostic and therapeutic process are an essential component. **Conclusion:** Functional symptoms are common in patients with clinically definite multiple sclerosis; we propose initial guidelines to aid clinicians in evaluation and management of these symptoms. Further research is needed to understand the prevalence, clinical presentation and best approaches to treat functional disorders in MS patients.

NO. 57

A CASE OF GENDER DYSPHORIA WITH COMORBID PSYCHOTIC SYMPTOMS

Lead Author: Saumya Rachakonda, M.D.

SUMMARY:

Background: Gender dysphoria is associated with stigmatization, negative self-esteem and high rates of comorbid mental illness, most notably depression and anxiety, but also psychosis. We must be astute to signs of comorbid psychiatric diagnoses in this population. This is a case of an unspecified psychotic disorder in a gender dysphoric individual with several life stressors. **Case:** Ms. H. is a 26-year-old South Asian natal male undergoing transition to female who presented due to poor oral intake and aggressive behavior. This is the patient's second psychiatric hospitalization, with the first being five months prior. Upon interview, it was learned that the patient became nonadherent with discharge medication (aripiprazole 5mg daily) and developed paranoid ideation, isolative behavior, poor hygiene, unprovoked and aggressive acts toward family members, inappropriate affect, and ideas of reference. Ms. H. had no medical history, no significant family history, and no history of substance use. She stated that she kept the gender transition a secret from her family because of their strict cultural views, and she also described inconsistently taking the hormones due to "laziness to fill the prescription." Of note, records from the hormone clinic state that the patient refused psychiatric follow-up despite encouragement. During the admission, Mrs. H. showed isolative behavior on the unit, with extremely limited oral intake at one point necessitating intravenous fluids and nutritional supplements. She was started on olanzapine Zydis 5mg daily for treatment of unspecified psychotic disorder. As her stay progressed, Mrs. H. became more verbal with the team and had improved her hygiene. Her behavior became less isolative, as she was seen on the unit and was visible for meals in the common dining area. She returned to baseline behavior, and symptoms of gender dysphoria did not change during treatment with antipsychotic medication. Upon discharge, Mrs. H. stated she wanted to resume her course of hormone therapy at her outpatient clinic. **Discussion:** Gender dysphoria may present as a standalone psychiatric diagnosis, with or without comorbidity, or it may present as a delusion secondary to a psychotic illness such as schizophrenia. Some prior work suggests a gender effect in which male-to-female transition patients seem to exhibit higher rates of psychiatric

comorbidities than female-to-male patients. In this case, a confluence of factors such as inconsistent hormone therapy, nonadherence with psychiatric discharge medication, lack of family support and cultural barriers all contributed as stressors in the patient, leading to exacerbation of psychiatric illness. This case represents the importance of close psychiatric follow-up for individuals with gender dysphoria.

NO. 58

TREATING DEPRESSION: THE ART OF SELF-HEALING WITH INTERMITTENT FASTING

Lead Author: Sanjeev K. Rally, M.D.
Co-Author(s): Pankaj Manocha, M.D., Farzana Bharmal, M.D.

SUMMARY:

Background: Depression is the leading cause of disability in the United States and worldwide. An estimated 350 million people globally (from all age groups) and approximately 30 million people within the United States suffer from depression (per WHO October 2015 factsheet). Antidepressants are considered to be effective in treating depression, but with limited efficacy, as approximately 30–46% of patients fail to fully respond to their initial trial. Despite the evidence, pharmaceutical companies continue to aggressively market antidepressants, as they are the second most commonly prescribed medication in the United States, behind only cholesterol-lowering agents. We reviewed literature on the ancient holistic concept of intermittent fasting (IF) as a potentially cost-free, alternative treatment for depression considering its role in modulation of neurotransmitter levels, anti-inflammatory effects, antioxidative effects and synthesis of neurotrophic factors. **Objective:** Explore the possibility of IF as a cost-free, alternative treatment option for depression and raise provider awareness of its potential mood-enhancing effects. **Methods:** A literature review of the mental and physical benefits of IF was conducted through PubMed, Google scholar, Ovid MEDLINE, PsycINFO and Up-to-date. **Discussion:** For thousands of years, mankind has utilized fasting throughout varied cultures and religions, including Christianity, Islam and the ancient Vedic philosophy, as a means of self-healing and spiritual growth, though perhaps the significance of such a unique tradition has been lost with time. It is widely known that elevated inflammatory biomarkers are a major risk factor for depression, and per literature, evidence suggests that inflammation may play a role in its pathophysiology. Recent studies have shown that IF has anti-inflammatory properties, antioxidative effects and the ability to elevate neurotransmitter levels, which may all contribute to its mood-enhancing effects. Europe has actually applied this knowledge and established fasting clinics used for the treatment of chronic medical conditions including depression. Our hope is to raise awareness of the holistic benefits of this ancient concept, thereby inspiring further research as a potential alternative treatment for depression. **Conclusion:** Intermittent fasting is a practice that has been used for centuries and has been shown to improve mood and cognition in individuals with depressive symptoms. Its use under medical supervision for selected patients is potentially therapeutic in depression and other chronic medical conditions. Further human studies are required to better understand its therapeutic extent in treating depression.

NO. 59

A CASE OF CATATONIA AND EPSTEIN BARR VIRUS: REVIEW OF THE LITERATURE FOR CATATONIA AND VIRAL INFECTION

Lead Author: Aimy Rehim, M.D., M.P.H.

SUMMARY:

Background: Catatonia has been a well-documented phenomenon in literature as a feature of psychiatric and organic disorders. It has been linked as a manifestation of several viral infections including HIV, anti-N-methyl-d-aspartate (NMDA) receptor encephalitis, herpes simplex encephalitis, subacute sclerosing panencephalitis and dengue fever. Here we present a case that has not been previously described in English literature, in which a young man with a recent positive Epstein Barr Virus (EBV) titer develops signs and symptoms of catatonia responsive to benzodiazepines. **Methods:** PubMed review of catatonia and viral infection for past 20 years. Use of Bush-Francis Catatonia Rating Scale (BFCRS) for measurement of catatonic signs and symptoms. **Case:** A 19-year-old single Caucasian male presented to a community hospital ER withdrawn, staring and with memory lapses. Routine medical workup was within normal limits, and urine toxicology was negative. The patient was discharged home with follow-up with primary care physician (PCP). On outpatient workup with PCP, the patient was negative for all infectious workup except for positive EBV titer (>600U/mL, normal range 0–—

18U/mL) and routine medical workup within normal limits included a normal thyroid-stimulating hormone (TSH). The patient was referred to an outpatient neurologist with neurological exam, EEG and MRI within normal limits and was subsequently admitted to neurology service at the University Hospital for further workup. He was found to be negative for encephalitis, hepatitis, vasculitis, and other infectious and neurologic etiologies. The patient had presented with symptoms of being mute, withdrawn, staring, posturing and immobility (BFCRS score=6). During lumbar puncture, the patient was given a benzodiazepine and became more alert, responsive and reportedly back to baseline per his self-report and his mother's report. Psychiatry was consulted due to this observed response. The patient continued to respond to benzodiazepine challenge. Given his presentation, no other etiology found and response to benzodiazepines, the patient was treated for catatonia and discharged on standing dose of lorazepam with outpatient psychiatric follow-up. **Discussion:** This patient presented with catatonic symptoms, no mood or psychotic disorder reported in history, and unremarkable workup other than positive EBV titer. The patient had not received steroids or fluoroquinolones, which are known in the literature to possibly cause catatonia. It is noted through the review of the literature that viral infections have been related to catatonic presentations, but this is the first case report connected to an Epstein Barr Virus infection. This gives a strong consideration that catatonia should be considered as a possible presentation or differential related to viral infections.

NO. 60

PSYCHIATRIC COMORBIDITIES IN EATING DISORDERED PATIENTS

Lead Author: Kathryn K. Ridout, M.D., Ph.D.
Co-Author(s): Samuel J. Ridout, M.D., Ph.D., Kelly Fitzgerald, B.A., Abigail Donaldson, M.D., Jonathan Kole, M.D., Brian Alverson, M.D.

SUMMARY:

Background: Eating disorders affect five to six percent of the adolescent population. Comorbid psychiatric illness may significantly impact patient presentation and severity. This study utilized a database of adolescents admitted to the inpatient service of a tertiary care academic medical center to assess prevalence of depression, history of psychiatric admission and history of suicidal ideation in these patients as well as potential associations between presence of depressive illness and several indicators of illness severity including basic anthropometric variables as well as eating disorder behaviors. **Methods:** An IRB-approved retrospective chart review was conducted using the Strengthening the Reporting of Observational Studies in Epidemiology guidelines. Charts reviewed were of adolescent patients hospitalized for treatment of their eating disorders at a tertiary children's hospital from October 2010 to April 2014 and identified using ICD-9 codes of eating disorders as primary or secondary diagnoses (307.1 anorexia nervosa, 307.5 eating disorder not otherwise specified or 307.51 bulimia nervosa). Reviewers collected demographic data, vital signs, diagnostic laboratory data, relevant historical data, therapeutic interventions and clinical outcomes. A nine-step chart review process described by Gering et al. was used to minimize bias, and greater than 96% concordance was achieved among the extractors. Continuous variables were described using mean±standard deviation, while categorical variables were described using percentages. **Results:** 246 eligible encounters were identified, which represented 148 unique subjects. The mean age of the population was 15.8±2.3; 86% were female. Ninety-nine (67%) patients had received prior outpatient eating disorder care. Depressed patients accounted for 69 (46%) patients; 29 patients (19%) had a history of psychiatric inpatient admission, while 41 (27%) had a documented history of suicidal ideation or attempt. There were no significant differences between eating disorder patients with or without a history of depression with respect to restriction or bingeing behaviors, laxative use, syncope, lightheadedness, palpitations, orthostasis or primary amenorrhea. An association between depression and purging behaviors approached significance (p=0.09). Patients with a comorbid depression had a significantly higher BMI than nondepressed patients (18.6±4 vs. 17.3±2.3, p=0.012); depressed patients with a history of psychiatric inpatient hospitalization had a significantly longer eating disorder preclinical illness compared to nondepressed patients (p=0.003). **Conclusion:** Depression is highly prevalent in adolescent patients with eating disorders and is associated with anthropometric and behavioral differences that are highly relevant to their disordered eating behavior. Treatment programs may benefit from vigilance for both eating disorder behavior and psychopathology.

NO. 61

SEX DIFFERENCES IN ADOLESCENT PATIENTS WITH EATING DISORDERS

Lead Author: Samuel J. Ridout, M.D., Ph.D.
Co-Author(s): Kathryn K. Ridout, M.D., Ph.D., Kelly Fitzgerald, B.A., Brian Alverson, M.D., Johnathan Kole, M.D., Abigail Donaldson, M.D.

SUMMARY:

Background: While eating disorders are the third most common diagnosis in adolescent females, they are far less prevalent in young males. Limited evidence has previously suggested some sex-specific differences in patient history and presentation. This study offered an opportunity to assess sex differences in a sample of adolescents admitted for treatment of eating disorders to a tertiary care academic medical center. **Methods:** An IRB-approved retrospective chart review was conducted using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. Charts reviewed were of adolescent patients hospitalized for treatment of their eating disorders from October 2010 to April 2014. Potential encounters were identified using ICD-9 codes of eating disorders as primary or secondary diagnoses, specifically 307.1 (anorexia nervosa), 307.5 (eating disorder not otherwise specified) or 307.51 (bulimia nervosa). Reviewers collected demographic data, vital signs, diagnostic laboratory data, relevant historical data, therapeutic interventions and clinical outcomes. A nine-step chart review process described by Gering et al. was used to minimize bias. To ensure accuracy across extractors, the first 10% of charts were independently examined; greater than 96% concordance was achieved among the extractors. Continuous variables were described using mean±standard deviation, while categorical variables were described using percentages. **Results:** 246 eligible encounters were identified, which represented 148 unique subjects. 127 (86%) were female (mean age 15.9±2.3), and 21 (14%) were male (mean age 15.7±2.3). Significantly more males with eating disorders had comorbid depression than females (67% vs. 43%, p=0.046), but had a significantly lower likelihood of prior psychiatric hospitalizations (10% vs. 21%, p<0.0001). Males and females with eating disorders did not differ in their history of suicidal ideation or attempts (42% vs. 25%, p=0.12). **Conclusion:** Depression is an important comorbidity in male and female patients with eating disorders. These data suggest that depression in males with eating disorders may be more prevalent than previously thought, yet engagement with psychiatric resources in this population appears more limited than in females. Future work should include identification and treatment for depression in male patients with eating disorders.

NO. 62

HEALTH PROFESSIONAL STUDENTS AS LAY COUNSELORS: AN EVIDENCE-INFORMED MODEL FOR THE DELIVERY OF BEHAVIORAL HEALTH TO UNINSURED IMMIGRANTS

Lead Author: Juan Rodriguez-Guzman, B.S.
Co-Author(s): Marco Ramos, B.A., Michelle Silva, Psy.D., Andres Barkil-Oteo, M.D.

SUMMARY:

Background: Undocumented immigrants face psychosocial stressors while emigrating and living in the United States that are associated with mood disorders. Since the implementation of the Affordable Care Act, restrictive policy measures have limited access to health care for undocumented immigrants. Global initiatives to train lay counselors in the delivery of mental health care have been shown to be effective with populations located in low-resource settings. To address the lack of mental health providers available to the uninsured Spanish-speaking immigrant community, a behavioral health program led by supervised health professional students acting as lay counselors was implemented in a student-run free clinic. **Methods:** Spanish-speaking health professional students were trained and supervised by a team of psychiatrists and psychologists to deliver a psychoeducational curriculum to patients at a Yale-affiliated, student-run free clinic. Over a period of six to eight sessions, patients participated in a series of individual meetings with the student facilitators designed to 1) Improve their understanding of common acculturative stressors associated with the Latino immigrant experience; 2) Reduce their psychosocial stressors; and 3) Enhance their coping skills. The Patient Health Questionnaire–9 (PHQ-9) was used to monitor patients' response to the program intervention. **Results:** Since the program's inception in 2012, 256 patients who have sought medical care at the student-run free clinic have been screened for depression with the Patient Health Questionnaire–2 (PHQ-2). Approximately 35% of patients (n=88) had a positive PHQ-2 and were administered a PHQ-9. Twenty-two patients have enrolled in the program, 66.7% female with a mean age of 40.3 (SD=12.5.) Eighteen patients completed the program (three

dropped out after the first session; one was transferred to a mental health professional). For patients who completed the program, average initial PHQ-9 score was 11.7 (SD=6.14), and average PHQ-9 score after completing the program was 4.88 (SD=4.59). There is a statistically significant decrease from initial PHQ-9 to final PHQ-9 ($p \leq 0.001$). **Conclusion:** This student-run behavioral health program serves as a model for rational task shifting, expanding access to mental health services to undocumented immigrants, and educating students in the social and cultural barriers that affect the delivery of mental health care in the Latino immigrant community.

NO. 63

DATA MINING OF THE STANLEY NEUROPATHOLOGY CONSORTIUM INTEGRATIVE DATABASE TO UNDERSTAND THE NEUROBIOLOGY OF MAJOR DEPRESSIVE DISORDER: GABA

Lead Author: Shilpa Sachdeva, M.D.
Co-Author(s): Manish Jha, M.D.

SUMMARY:

Background: In search for novel antidepressant agents, medications targeting GABA neurotransmission hold some potential but have been unexplored. In rodent models, blockade of GABA-B receptor leads to antidepressant-like activity, suggesting a potential role of GABA-B receptor antagonists as antidepressant medications. Several lines of investigation suggest aberrant GABA neurotransmission in the pathophysiology of major depressive disorder (MDD). Depressed patients have reduced cortical GABA levels on magnetic resonance spectroscopy, and antidepressant medications and electroconvulsive therapy (ECT) increase cortical GABA levels. Postmortem brain studies of GABAergic deficits in schizophrenia are well studied, but there is limited information on similar deficits in MDD. Findings show reduced density of cortical GABAergic interneurons in the dorsolateral prefrontal cortex of depressed subjects. As Stanley Foundation's biorepository is a unique resource available in the public domain, this study elucidated deficits in GABAergic neurotransmission in MDD subjects as compared to controls using the data mining tool of the Stanley Neuropathology Consortium Integrative Database (SNCID). **Methods:** After registering for online access to SNCID, we accessed the Neuropathology Consortium data mining tool on December 7, 2015. Out of 305 studies reported in Stanley's database, only 11 have studied GABA-related markers. Of these, only two have reported findings in published literature. We then conducted a systematic search using the dropdown menu of the data mining tool for all brain regions and for all markers with the search terms "GABA," "GAD1," "GAD67," "GAD2," "GAD65" and "GABAR." We then used nonparametric tests to compare levels of these marker types in depressed and control subjects and compiled them in a table with marker type, name of investigator, brain region, type of method, number of depressed and control subjects, and p-value of analyses. We set the p-value at 0.05, as this is an exploratory analysis, and for those markers with significant p-value, expression levels were compared by examining the graphical representation in the data mining tool. **Results:** In this study of the SNCID database, we found that Webster et al. had systematically evaluated expression levels of GAD67 in multiple brain regions: the frontal cortex, cingulate cortex, medial temporal lobe (entorhinal cortex and hippocampus), superior temporal cortex and orbital frontal cortex. Of these, GAD67 levels were lower in multiple regions of the medial temporal lobe. **Conclusion:** A systematic analysis of the Stanley Neuropathology Consortium Integrative Database using a web-based tool suggests aberrant GABAergic neurotransmission in the entorhinal cortex and hippocampus of depressed subjects. This report demonstrates the utility of this easily accessible database in exploration of the molecular basis of major depressive disorder.

NO. 64

A CASE OF WILSON'S DISEASE WITH NORMAL COPPER LEVELS PRESENTING AS MANIA

Lead Author: Shilpa Sachdeva, M.D.
Co-Author(s): Kapil Aedma, M.D.

SUMMARY:

Background: Wilson's disease (WD) is an autosomal recessive hereditary disease that is characterized by a deficiency of ceruloplasmin, the serum transport protein of copper. About 15% incidence of psychiatric disturbances has been reported in WD. We report a case of well-controlled WD that presented as mania. **Case:** The patient is a 17-year-old Asian-Indian male born to consanguineous parents. Three years prior, he was hospitalized to an inpatient psychiatric facility for irritability, flight of ideas, decreased need for sleep and aggression and diagnosed with bipolar mood disorder with current episode as mania and started on both lithium and risperidone, which controlled his psychiatric

symptoms. He progressively developed extreme rigidity, dysarthria and drooling. Serum copper levels and imaging studies confirmed the diagnosis of WD. He was started on penicillamine and then trientine, and his cooper levels progressively declined to normal limits with good control of his symptoms. He presented with irritability, aggressiveness, emotional liability and lack of restraint. Vital signs and physical exam, including neurological exam, were within normal limits except for tremors in his upper extremities. He was alert and oriented, but had limited attention span, did not maintain good eye contact, had a tangential thought process and was possibly responding to some internal stimuli. His routine lab investigation found complete blood count, basic metabolic panel and liver function tests within normal limits. Serum cooper level was 5.72ug/dl (70–150Î¼g/dl). Serum ceruloplasmin level was less than 7.5ug/dl (18–35ug/dl). The 24-hour urinary copper level was 143mcg/d (32–64ug/d). Liver biopsy with most recent copper level was 50ug/g dry weight (15–55ug/g). Lithium level was 0.88. Most recent magnetic resonance imaging (MRI) revealed previously visualized hyperintense signal abnormalities in the basal ganglia and thalami that resolved. Gastroenterologist confirmed that the current episode is unlikely a relapse of his WD. He was diagnosed with bipolar disorder, most recent episode mania, and started on olanzapine while continuing on lithium, trihexyphenidyl, trientine, divalproex sodium and lorazepam. After one week of inpatient treatment on the above regime, his behaviors were controlled, and he was back to his baseline. **Conclusion:** The psychiatric manifestations may precede neurologic features in the early course of WD and also at any point in the course of the disease or as side effects of medication used to treat symptoms. In this patient, the psychiatric symptoms preceded other symptoms and led to diagnosis of WD. In the above presentation, his psychiatric symptoms and mania occurred even when copper levels were within normal limits, suggesting that it is possible to have well-defined psychiatric symptoms even in the absence of increased copper levels in WD.

NO. 65

DENYING ADMISSION TO A “SUICIDAL” PATIENT

Poster Presenter:Stuti Bhandari, M.D.
Lead Author: Nargis Sadat Azizi, M.D.
Co-Author(s): Shannon Kinnan, M.D.

SUMMARY:

Background: Admission criteria to an inpatient psychiatric hospital unit include the patient to be an imminent danger to self or others or unable to care for his/her own physical needs due to a mental illness. Because suicidal ideation (SI) meets criteria for psychiatric hospitalization, it is a challenge and an ethical dilemma to deny admission to a malingering patient endorsing SI. In this report, we will discuss various approaches that can be taken with such patients. **Case:** The patient is a 45-year-old male with a psychiatric history of schizoaffective disorder, attention-deficit/hyperactivity disorder, polysubstance use disorder, borderline personality disorder, malingering and 89 local emergency room (ER) visits within a span of six months due to SI complaints who presented to an ER endorsing SI with a plan and demanding alprazolam and methylphenidate. He is well known in the area for resource overutilization and consistent nonadherence to psychiatric care. During each ER encounter, he has had a similar presentation in which he endorses depression, SI and demands the same psychotropics. If he is not given the requested medications, he demands to be discharged. He then presents to a different ER with the same presentation and demands. Different approaches have been taken with this patient, including discharge to home, overnight observation in the ER, inpatient psychiatric hospitalization and admission to a long-term residential facility. DISCUSSION The report reviews various approaches cited in multiple studies with malingering patients presenting with questionable SI. It is vital to perform a thorough safety assessment at each encounter on a case-by-case basis while being mindful of countertransference. The possible dispositions include: 1) Discharge to home: A patient can be safely discharged home if he/she is at a low suicide risk with a known malingering history without any past suicide attempt. Discharge documentation includes a comprehensive safety plan addressing any concerns for safety and outpatient therapy; 2) Observation in the ER: When there is a question about the veracity of a patient’s expressed SI, observation in the ER provides an opportunity to reassess the patient. However, it might not be practical due to limited availability of beds in the ER; 3) Acute psychiatric hospitalization: This is the safest approach if the patient is at a high risk for suicide. However, it is not therapeutic for a malingering patient because it reinforces the behavior; 4) Long-term placement in a psychiatric facility: This is beneficial for patients who have failed outpatient

care. However, this might not be an available option due to limited beds and lack of evidence of efficacy. **Conclusion:** Denying admission to a suicidal patient can be an ethical quandary. All suicide gesture, threats and attempts must undergo a thorough suicide risk assessment and appropriate documentation in order to justify a treatment decision.

NO. 66

A COMPARISON OF SCHIZOPHRENIA PATIENTS WITH OR WITHOUT MEDICATION COMPLIANCE

Lead Author: Dilek Sarikaya Varlik, M.D.
Co-Author(s): Cenk VarlÄ±k, M.D., UÄŸraÅŸ Erman Uzun, M.D., Oya GüÃ§lü, M.D., Sermin Gül Kahya, M.D., Murat ErkÄ±ran M.D.

SUMMARY:
Background: Drug application is the basic element of treatment of schizophrenia and other psychotic disorders. Discordance rate to antipsychotic drugs varies between 11–80% and is a serious problem in clinical practice, with significant results. Treatment compliance problems increase hospitalization, morbidity and mortality. If we predetermine the patient who cannot adapt the drug treatment, we may take measures. Therefore, we determined the factors that may be associated with drug incompatibility in this study. **Methods:** Sixty-four schizophrenic patients were enrolled in the study. They were followed up by community mental health services for at least six months. Twenty-nine patients were admitting medication treatment. Thirty-five patient were refusing treatment or using drugs irregularly. We compared them in terms of sociodemographic characteristics, clinical symptoms and insight levels. **Results:** There is no significant difference between sociodemographic characteristics. Paranoid type, the average duration of current therapy continued in the same way (month), insight levels and global assessment scale scores were significantly high in the group with medication compliance. Hospitalization rate during community mental health service follow-up period and Positive and Negative Syndrome Scale (PANSS) positive, negative, general psychopathology and total scores were significantly higher in the group without medication compliance. **Conclusion:** There are many factors affecting medication adherence in patients with schizophrenia. If we determine the factors that may change (drug compliance, family treatment, psychoeducation, treatment team, etc.), we can improve medication compliance by making the necessary adjustments.

NO. 67

INPATIENT PSYCHIATRY HOME MEDICATION PROTOCOL: REDUCING HEALTH CARE COSTS WHILE IMPROVING SAFE PATIENT CARE AT A NAVY MEDICAL CENTER

Lead Author: Stephenie A. Scully, M.D.
Co-Author(s): John Henley, R.N., Jeffrey Millegan, M.D., M.P.H.

SUMMARY:
Background: The current practice at the Naval Medical Center San Diego regarding medications in the possession of a patient on admission is to take custody and destroy them. These medications are often prescribed again upon discharge from the hospital, leading to potential redundant costs and increased risk of patients stockpiling medications if they already had an adequate home supply. **Objective:** Decrease destruction of medications that would be utilized after psychiatric hospitalization, decrease money spent on new prescriptions to replace medications destroyed and improve patient safety. **Methods:** Over a period of six months, a multidisciplinary team of physicians and nurses documented all medications brought in by a patient at admission. Non-controlled medications were stored in tamper proof bags in a locked file cabinet on the unit. When possible, medications were sent home with a family member and documented in the medical record. At discharge, the treatment team returned the medications that were still indicated for continued treatment to the patient. Medications not continued were destroyed. **Results:** Eighty-seven out of 919 psychiatric admissions required the storage of medications during a hospitalization. Fifty-five of those 87 admissions resulted in medication returned to the patient at discharge. Seventeen minor processing errors were noted, with none compromising patient safety. Returned medications accounted for a total savings of $2,771.18. Twelve of 55 admissions included medications not carried by the hospital that the patient would have had to purchase out of pocket. A patient's savings per admission ranged from $2.48 to $685.80. **Conclusion:** This project demonstrated that storing and returning home medications brought in at admission to patients who were recommended to continue a previous medication had a significant cost savings to both the hospital and individual patient. Better care was provided to patients since physicians

were able to accurately account for home medications and reduce redundancies. If scaled up to all of Navy medicine, this process has the potential for significant savings and improved quality of care.

NO. 68

EVALUATION OF RELATIONSHIP BETWEEN MBTI PERSONALITY FACTORS AND BIG FIVE PERSONALITY TRAITS WITH PREMENSTRUAL SYMPTOMS

Lead Author: Mahrokh Shayanpour, M.D.
Co-Author(s): Mohammad R. Abedi, Ph.D., Maryam Hoorfar, M.D.

SUMMARY:

Background: Premenstrual syndrome (PMS) is a cluster of psychological and/or physical symptoms in women that emerge one to two weeks before the onset of menstruation. PMS is highly prevalent and profoundly interferes with quality of life. The purpose of this study was to explore if there is any association between personality traits assessed by Myers Briggs Type Indicator (MBTI) test and Big Five Inventory and symptoms of PMS. **Methods:** Women ages 20–45 were screened from an outpatient clinic in Shariaty General Hospital in Esfahan, Iran. 120 women were selected randomly after screening for major mental illness, hormone or psychotropic medication treatment, breastfeeding, pregnancy, and menopause. These women had to be in the luteal phase of their menstrual cycle to qualify for the study. A PMS questionnaire as well as MBTI and Big Five Inventory were administered. **Results:** Neuroticism scores correlated positively with PMS symptoms (p=0.01), and agreeableness and conscientiousness both correlated negatively with symptoms (p=0.02 and p=0.005, respectively). After analyzing for correlations between symptoms and MBTI questionnaire scores, the intuition and feeling types correlated positively with PMS symptoms (p=0.01and p=0.03, respectively). Psychological symptoms of PMS were more common in the intuition and feeling types (p=0.01 and p=0.01, respectively), and physical symptoms were more common in the intuition type (p=0.01). **Conclusion:** An understanding of how personality traits relate to PMS is essential for a better understanding of the etiopathogenesis of the illness. More clarity about the heterogeneous nature of symptoms will aid in developing interventions specific to illness subtypes. Moreover, large-scale replications of this study will aid in identifying vulnerable populations.

NO. 69

SUBSTANCE USE IN POST-BARIATRIC SURGERY PATIENTS: A REVIEW OF THE LITERATURE

Lead Author: Sharvari P. Shivanekar, M.D.

SUMMARY:

Background: An estimated 33.8% of American adults are classified as obese, with prevalence of "morbid" obesity increasing most rapidly. Bariatric surgery/weight loss surgery (WLS) is indicated in obese patients with a BMI of at least 40kg/m^2 or at least 35kg/m^2 with serious comorbidities. A thorough and specialized preoperative psychosocial assessment is an important part of a comprehensive bariatric treatment protocol. Current alcohol or illicit drug use disorder is among the exclusion criterion for undergoing WLS in the United States. Recent studies suggest that certain subsets of WLS patients may be vulnerable to developing postsurgical substance use disorders (SUDs). SUDs may develop de novo for a subgroup of weight loss surgery patients, particularly those who have gastric bypass (RYGB) procedure. **Objective:** Review current literature about substance use disorders in post-bariatric or weight loss surgery and Determine if postsurgical psychiatric assessments and substance use screenings are routinely included in the treatment protocols of post-WLS patients. **Methods:** A literature search was done on Medline/PubMed and Ovid using the keywords bariatric surgery, weight loss surgery, substance use, psychiatric assessment and postsurgical. **Results:** Although several articles are written about presurgical psychological and psychiatric assessments of bariatric surgery candidates, the research regarding postsurgical psychiatric assessments and substance use screening is limited. **Discussion:** Current literature findings highlight the development of post-WLS SUD among individuals both with and without a reported SUD history. Some studies done on this subject have limited racial and socioeconomic diversity. Assessing for family history of SUD and coping skills at the presurgical evaluation is recommended for improving postsurgical psychiatric morbidity. Future research should identify psychological and physiological risk factors for SUD following surgery. Screening for substance use should be done in all post-WLS patients to help in prevention and to ensure early treatment.

NO. 70

VAPING SPECIAL K: A NOVEL METHOD OF KETAMINE INGESTION

Lead Author: Jessica J. Sierzchula, D.O.
Co-Author(s): Christopher Brawner, M.D., M.C., Daniel Shippy, M.D., M.C.

SUMMARY:
Since the debut of the e-cigarette on the United States commercial market in 2006, it has demonstrated to be a beneficial path toward tobacco cessation. However, despite this benefit, it has created a new modality for novel substance ingestion. This behavior was first brought to the attention of Naval Medical Center Portsmouth psychiatry by a patient who was admitted to the inpatient mental health ward. He disclosed a detailed account of the effects of aerosolized ketamine intoxication and circumstances surrounding its use. After a literature review, it was determined that there is little to no evidence of novel ketamine aerosolizing reported in academia. This review will specifically discuss the recreational use of ketamine via e-cigarettes and more broadly the clinical relevance of e-cigarette use and abuse.

NO. 71

INFLUENCE OF HTR3 GENETIC VARIATIONS ON OBSESSIVE-COMPULSIVE DISORDER: A SINGLE-MARKER AND HAPLOTYPE-BASED ASSOCIATION STUDY

Lead Author: Sungyun Sohn, M.D.
Co-Author(s): Hae Won Kim, M.D., Jooah Cheon, M.D., Kee Namkoong, M.D., Ph.D., Eun Hee Hwang, Chan-Hyung Kim, M.D., Ph.D., Jee In Kang, M.D., Ph.D., Se Joo Kim, M.D., Ph.D.

SUMMARY:
Objective: Family, twin and molecular genetic studies have demonstrated that genetic factors may exert significant influence on the development of OCD and the manifestation of symptoms. Evidence in the extant literature has indicated associations between serotonin-related genetic variants and OCD, but few studies have explored the involvement of serotonin receptor type 3 genes in OCD. This study examined if HTR3 genetic variants may affect susceptibility to OCD. **Methods:** We performed a case-control study with 596 individuals with OCD and 599 controls. Ten common single nucleotide polymorphisms in the five distinct HTR3 genes were genotyped (HTR3A: rs1062613, rs1176713; HTR3B: rs3758987, rs1176744, rs3782025; HTR3C: rs6766410, rs6807362; HTR3D: rs6443930, rs1000952; HTR3E: rs7627615). **Results:** A significant difference in the genotype distribution of rs1176744 was detected between individuals with OCD and controls (odds ratio (OR)=0.74, 95% confidence interval (CI) [0.60, 0.91], p=0.0047), which was restricted to males when the analyses were stratified by sex (OR=0.70, 95% CI [0.55, 0.89], p=0.0040). On analyzing clinical characteristics of OCD, significant associations were found for rs3758987 with age at onset in male subjects (OR=0.48, 95% CI [0.30, 0.77], p=0.0023) and for rs6766410 and rs6443930 with the contamination/cleaning dimension in female subjects (OR=0.36, 95% CI [0.18, 0.69], p=0.0017 and OR=0.47, 95% CI [0.29, 1.78], p=0.0029, respectively). In addition, rs6766410 was significantly related to contamination-based disgust scores in the whole OCD sample (p=0.0045). A two-marker composite haplotype in HTR3B was associated with OCD in male subjects (OR=0.75, 95% CI [0.58, 0.97], permutated p=0.0339). **Conclusion:** Our results support a role for common variants of HTR3 in OCD and certain examples of its clinical phenotypes. These findings may have implications for pharmacogenetic studies of 5-HT3 antagonists in the treatment of OCD.

NO. 72

IS THERE A LINK BETWEEN CHRONIC INFECTION WITH TOXOPLASMA GONDII AND OBESITY IN SCHIZOPHRENIA?

Lead Author: Alice E. Stone, M.D.
Co-Author(s): Gloria M. Reeves, M.D., Ina Giegling, M.D., Annette M. Hartmann, Ph.D., Bettina Konte, Ph.D., Marion Friedl, Ph.D., Ashwin Mathai, M.D., Patricia Langenberg, Ph.D., Dan Rujescu, M.D., Teodor T. Postolache, M.D.

SUMMARY:
The well-replicated association between latent Toxoplamsa gondii (T. gondii) infection and schizophrenia may also have implications for obesity risk. A recent large study of individuals without mental illness reported a higher prevalence of T. gondii seropositivity among obese compared to non-obese individuals. In this study, we investigated the association between latent T. gondii infection and obesity among individuals with schizophrenia. Participants in this study include 950 individuals with schizophrenia, ages 18–80, recruited in Germany. Individuals were excluded if they had a neurologic condition, cognitive disorder or other psychiatric diagnoses, including personality disorder. T. gondii seropositivity was defined as IgG titer≥0.8, and obesity was defined as Body Mass Index (BMI)≥30kg/m^2. Seropositivity was compared by chi-

squared tests, and logistic regressions and titers were analyzed using one-way ANOVA and liner regression models, with adjustment for age, sex, education level, Positive and Negative Syndrome Scale (PANSS) score and chlorpromazine equivalent. After adjustments, there was no significant difference in T. gondii seropositivity or serointensity between obese and non-obese groups. This result differs from that of our previous study on T. gondii seropositivity in non-mentally ill participants recruited in the same geographic region, which may be explained by the greater and multifaceted obesity risk factors among individuals treated for schizophrenia (e.g., unhealthy lifestyle behaviors, sleep abnormalities, antipsychotic medication metabolic side effects, inflammatory pathway abnormalities) compared to non-mentally ill individuals. Further, antipsychotic treatment may impact T. gondii serointensity. Future studies are needed to assess the relationship of obesity and schizophrenia among antipsychotic naïve, first-episode patients to assess if T. gondii infection is an appropriate target for obesity prevention among individuals in early stages of illness. This research was supported by a Distinguished Investigator Award from Rocky Mountain MIRECC, Denver, CO, VISN 5 MIRECC Baltimore, MD, and a NORC exploratory grant offspring of the parent grant P30 DK072488 from NIDDK. The antibody measurements were performed by the Stanley Laboratory of Developmental Neurovirology, Hopkins University, Baltimore, MD. Additional support was provided by the Joint Institute for Food Safety and Applied Nutrition (JIFSAN)/FDA cooperative agreement FDU.001418. The views, opinions and/or findings contained in this poster are those of the authors and do not necessarily represent the official policy or position of the Department of Veterans Affairs, FDA or the United States government.

NO. 73

GENETIC INFLUENCES ON CARDIOVASCULAR SIDE EFFECTS OF ADHD PHARMACOTHERAPY

Lead Author: Ajith Subhash

Co-Author(s): Lauren C. Seaman, Christopher P. Laughlin, Gerhard S. Hellemann, James J. McGough, James T. McCracken, Erika L. Nurmi

SUMMARY:

Background: Side effects of common attention-deficit/hyperactivity disorder (ADHD) medications include changes in cardiovascular (CV) profiles. A recent study of over 700,000 subjects in the Denmark health registry found that individuals exposed to stimulants had a higher risk of CV events (hazard ratio=1.83), especially children (hazard ratio=2.20). Individual genetic backgrounds may explain the variability in these side effects and inform safe treatment matching. Initially, we captured complete common variation across drug target and signaling pathways to examine genetic association with CV measures during ADHD treatments, but later expanded the study to include genome-wide data. **Methods:** During both acute (eight weeks) and long-term (14 months) treatment phases with the stimulant dexmethylphenidate (d-MPH), the α-2 agonist guanfacine and a combination of both medications, we collected regular CV measures in the NIMH Translation Research to Enhance Cognitive Control (TRECC) sample of 202 children with ADHD (ages 7–14, 80% Caucasian, 70% male). Diastolic and systolic blood pressure (DBP and SBP) and heart rate (HR) were recorded at each of up to 24 visits, and serial EKGs were performed at five time points to assess medication-related cardiac changes. **Results:** All treatments were associated with short-term CV changes that normalized over time. Guanfacine was less well tolerated than d-MPH monotherapy, but tolerability of combination treatment was comparable to d-MPH. Despite theoretical concerns about CV risk with concomitant use of d-MPH and guanfacine, combination treatment mitigated the side effects of both monotherapies. A rare genetic variant in CNR1 was associated with extreme DBP decrease on guanfacine ($p=0.000004$), while variants in CHRNA7 and SLC6A4 predicted large SBP increases with d-MPH ($p=0.000019$). Replication and cross-disorder validation of these findings was performed in two samples of children with autism spectrum disorder (ASD) treated with methylphenidate and guanfacine, respectively. Similar patterns and effect sizes were seen in the replication samples. Preliminary GWAS analysis of treatment effects on DBP and SBP revealed multiple genome-wide significant loci that map within or adjacent to compelling candidates with prior BP association, family members involved in BP regulation, or data in BP QTL studies in rodents and functional validity. Interestingly, independent CNR1 SNPs were associated with diastolic BP in the candidate and GWAS analyses. **Conclusion:** The results suggest that genetic influences contribute to the risk of adverse CV effects of ADHD treatment. Initial replication, while underpowered, was promising. Unbiased, genome-wide analyses revealed additional underlying targets not

anticipated in candidate analyses. These data warrant replication in independent samples and prospective studies. Understanding these pharmacogenomic factors can provide insight into effective treatments while minimizing side effects.

NO. 74

CAN THE CANS BE MEANINGFULLY USED TO FACILITATE TRANSITIONS IN A COUNTY CHILD MENTAL HEALTH SYSTEM?

Lead Author: Dawn Sung, M.D.
Co-Author(s): Melanie Thomas, M.D., James Dilley, M.D., Amelie Meltzer, B.S., Christina Mangurian, M.D.

SUMMARY:
Background: The Child and Adolescent Needs and Strengths (CANS) is a validated assessment tool designed to facilitate communication between providers, help with placement in different levels of care and guide treatment planning. The CANS was recently adopted by the San Francisco County Behavioral Health System for use throughout its child mental health system and is administered by trained clinical staff upon admission, every 6–12 months and upon discharge. However, there is currently no standardized process for using CANS assessments to inform clinical decisions about patient transitions between levels of care. This project is designed to examine the extent to which CANS scores reliably reflect the level of care children are receiving. Our primary hypothesis is that CANS scores will be positively correlated with level of care, such that patients at the main intensive care program will have higher scores and require more acute services than patients served at another general community mental health clinic. **Methods:** This descriptive, cross-sectional study compares approximately 150 patients at a specialty child mental health clinic (Southeast Child Family Therapy Center) and approximately 45 patients at an intensive child psychiatry wraparound program (Family Mosaic Project) in San Francisco. Cross-sectional, de-identified data obtained from each site include age, race/ethnicity, primary language, gender, psychiatric diagnosis, length of treatment, number of clinic visits, number of crisis visits and most recent CANS assessment. We will use t-test analysis to examine our hypothesis that CANS scores will be positively correlated with level of care. **Results:** We anticipate that the CANS scores will reflect the higher acuity of cases in the intensive wraparound program compared to the specialty child mental health clinic. Preliminary data indicate that there was general improvement between intake and discharge in major CANS domains at both sites (50.6% at Southeast Child and 51.5% at the Family Mosaic Project). The study is currently underway, so further results are pending and will be available by the time of the poster presentation. **Conclusion:** Results from this study will determine whether CANS scores differ between levels of care and can be used to develop protocols about transitions of care within a county public mental health system. This study will also be broadly applicable to other child systems of care given the extensive utilization of the CANS in various child systems across the nation and the importance of appropriately matching level of care with patient needs, especially in under-resourced settings.

NO. 75

ENHANCING PATIENT SAFETY IN THE CONTEXT OF PATIENT FALLS ON PSYCHIATRIC ACUTE CARE UNITS IN A COMMUNITY HOSPITAL

Lead Author: Bibiana M. Susaimanickam, M.B.B.S.
Co-Author(s): Vikas Sinha, M.B.B.S., Nandita Puchakayala, M.B.B.S., Logan Hegg, Psy.D., Scot McAfee, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:
Background: Patient safety is a multifaceted concern for patients and providers, especially on acute care psychiatric units. Understanding patient safety issues is particularly challenging for the multidisciplinary team in the psychiatric patient population following a witnessed or reported fall on the unit. Within that calculus must be the consideration of the pros and cons of exposure to radiation related to unnecessary imaging studies after the fall and the limited staff availability on the units necessary to transport patients to/from radiology. Further, staff are concerned about thoroughly ruling out the “hidden dangers” of an intracranial bleed or other hard-to-evaluate sequelae of head trauma. Hence, clear policies and decision trees that are transparent and collaboratively defined are needed to attenuate this concern. This workgroup developed a comprehensive protocol that integrates psychiatry-specific considerations, nursing practices and indications for a head CT using the best published medical practices. A multidisciplinary approach to fall assessment and planning in a patient-centered, communication-positive manner was formulated within the AHRQ TeamSTEPPS framework. **Objective:** 1) Clarify indications and guidelines for

ordering a head CT after reported/witnessed patient fall; 2) Develop a standard post-fall protocol (PFP) for acute care psychiatric units in a community hospital setting that maximizes patient and unit safety, with efficacious staff communication; 3) Educate staff and implement the PFP; and 4) Evaluate changes in practice across disciplines in the assessment and management of patient falls, as well as the effect on patient care. **Methods:** A standardized PFP for reported/witnessed falls was formulated by the team. It includes the utilization of a post-fall huddle and post-fall note to be documented in the electronic chart. This is followed by staff education and implementation of the PFP on the units. We will obtain ratings of staff communication (modified AHRQ Culture of Patient Safety assessment) during fall episodes before and after implementation. The number and characteristics of patient falls from psychiatric units will be obtained for three-month periods before and after PFP implementation, along with the number of head CTs ordered after reported falls during these periods and if their indications align with the PFP via monthly chart review. **Conclusion:** Patient falls on an acute care psychiatric unit are potentially difficult and high-risk incidents for patients and staff. Developing a post-fall protocol that centers on staff communication, a shared "mental model" of head CT indications and a focus on patient safety will aid in limiting the radiation exposure to patients in situations that are not medically indicated in addition to reducing needless health care expenditure. Data obtained will allow health care administrators to make crucial decisions and education plans to ensure enhanced patient safety.

NO. 76

VITAMIN D LEVEL IN PATIENTS WITH ALCOHOL USE DISORDERS: A REVIEW OF THE CURRENT LITERATURE

Lead Author: Vitor S. Tardelli, M.D.
Co-Author(s): M. Lago, D. X. Silveira, M.D., Ph.D., T.M. Fidalgo, M.D., Ph.D.

SUMMARY:

Background: Recently, vitamin D has been broadly studied, as its deficiency or insufficiency is a global problem affecting at least one billion people. Vitamin D receptors have been found in the human brain, standing for another possible role for this vitamin. In psychiatry, low vitamin D levels have been associated with major mental disorders such as depression, schizophrenia and alcoholism. Available information about the association between alcohol and vitamin D is limited, with controversial results available. In addition, there is still no consensus about mechanisms through which alcohol intake would or would not impair vitamin D serum levels. We review the literature concerning the association between vitamin D serum levels and alcohol use disorders. **Methods:** We screened all articles that cited vitamin D and any information about alcohol use disorders. We searched for all articles published before November 2015 using the following databases: PubMed, Lilacs and SCIELO. Our search strategy included the terms vitamin D and alcohol in order to be as broad as possible. The following variables were extracted: 1) Author and year of publication; 2) Study design; 3) Number of patients included; 4) Primary outcome; 5) Details of what was evaluated; 6) Main findings; and 7) Limitations of the study. The discrepancies were resolved by consensus, and the corresponding author was consulted when needed. **Results:** We found 921 references in our preliminary search. After further analysis, 46 papers met our inclusion criteria, and data were extracted from all of them. Thirty-three of them (71.7%) were transversal studies. In 15 of the reviewed papers (32.6%), higher alcohol consumption was associated with higher vitamin D levels. In opposition to that, 16 papers found alcohol as a negative association with Vitamin D status. The remaining 15 papers found no significant correlation between alcohol intake and serum vitamin D levels. **Discussion:** Heterogeneous results were found in our review, with a similar number of papers pointing to a positive association, a negative association or the absence of associations. Nevertheless, it is important to note that the studies that found a positive association had considerably bigger sample sizes when compared to the other studies. More recent studies tended to find positive associations between vitamin D levels and alcohol intake. The older studies have compared vitamin D levels in alcoholic versus nonalcoholic patients, in opposition to more recent studies, which focused on more specific populations. Most of the selected papers were from high latitude countries, where sun exposition could be smaller than in tropical countries, which could represent a bias to the results found. **Conclusion:** There is still controversial data about vitamin D levels in patients with alcohol use disorders. Therefore, more studies are needed in order to investigate this association.

NO. 77

PUBLIC PERCEPTIONS OF MAJOR DEPRESSIVE DISORDER: A 2015 DISEASE AWARENESS SURVEY

Lead Author: Doug Taylor, M.B.A.
Co-Author(s): Susan Croce, B.Sc., Philip Sjostedt, B.Pharm.

SUMMARY:

Background: Major depressive disorder (MDD) is one of the most prevalent mental health disorders in the world, though perceptions of MDD among the general public remain at odds with established science. Many depressed patients are reluctant to discuss their experiences with friends and family, and therapeutic advances are rarely discussed outside the medical field. Public surveys of MDD provide physicians, patient advocacy groups and industry stakeholders with valuable insights into the disease and how it is perceived in 2015. **Objective:** U.S. adults' perspectives on the symptomology, prevalence and experiences with MDD are explored in the survey, which also seeks to quantify public perceptions of antidepressant therapy, the impact of MDD on patient functionality, and perceived challenges of managing depression. **Methods:** A virtual survey of 300 respondents from all education and socioeconomic backgrounds was conducted in May 2015. Respondents were polled on their knowledge of MDD, including familiarity with symptoms, which factors impact patients' quality of life and their direct experience with the disease. **Results:** 300 American adults (52.5% female, mean age 42.4) completed the survey, though not all answered every question. Eighty-seven of 267 respondents (32.6%) reported they suffered from depression. 61.8% of respondents believed identifying and providing solutions to depressive symptoms to be the biggest challenge to successful management of MDD, followed by diagnosing MDD (50.8%) and stress management (48.0%). Three-quarters (74.9%, 179 of 239) of respondents reported they thought 9.5% of American adults suffered from depression in a given year. 90.2% of respondents (231 of 256) reported they believed fatigue or loss of energy to be the most common side effect of depression, followed by significant weight shift (59.4%), sexual dysfunction (52.7%), and muscle tension or pain (39.1%). Thirty-nine respondents reported they were currently taking an antidepressant, with sertraline (46.2%) the most common. **Conclusion:** Public perceptions of MDD align with diagnostic criteria presented in the *DSM-5*, with general understanding of the symptoms associated with the disorder and accurate descriptions of the challenges faced and treatments available to depressed patients. Gaps remain in public perceptions of depression's prevalence, comorbidities and impact on decision making. Additional surveys will provide greater insight into how the public views MDD and allow physicians to bridge the gap in understanding regarding depression.

NO. 78

"WEEDING" THE SYNTHETIC WEEDS: CUTTING-EDGE DIAGNOSTIC SYSTEMS TO ASSESS DESIGNER DRUG USE

Lead Author: Tina S. Thakrar, M.D., M.B.A.
Co-Author(s): Vishal Madaan, M.D.

SUMMARY:

Objective: At the end of this poster session, participants will be able to: Understand shortcomings of urine drug screen while assessing use of designer drugs; Identify designer drug toxidromes based on clinical presentation and evaluation; and Review current, innovative diagnostic options to assess designer drug use. **Background:** Over the past decade, the abuse of designer drugs including bath salts, synthetic cannabinoids, salvia divinorum, khat, methoxetamine and piperazine derivatives has become increasingly prevalent. These substances are considered by many users to be "legal highs," and individuals are able to alter chemical compounds in order to avoid detection by standard methods utilized by health care professionals. Acute toxicity can manifest with severe neuropsychiatric symptoms including agitation, psychosis, hemodynamic instability and death. The inability to quickly and clearly identify the inciting agent can impede the clinician's ability to appropriately treat patients. This poster reviews current literature on new designer drugs, identifies their varied clinical presentations and revisits current diagnostic options available to clinicians. **Methods:** A PubMed literature search was completed, resulting in 17 studies available for review, of which 12 studies focused on new screening techniques, while four studies focused on clinical evaluation and management of designer drug toxidromes. **Discussion:** Designer drug acute toxicity may present with a myriad of acute symptoms requiring immediate supportive care in addition to long-term management. Clinicians must consider designer drug toxicity in any patient presenting with acute neuropsychiatric symptoms, and in addition to

clinical evaluation, the primary diagnostic tool used to manage drug toxicity is the Urine Drug Screen (UDS). UDSs are commonly used in multiple settings including hospitals due to the ease of use, cost effectivity and short turnaround time. There are, however, several drawbacks to the UDS, including false positives and false negatives. Positive results on a UDS require verification by gas chromatography-mass spectrometry (GC-MS), which is not ideal in the acute setting. Additionally, the standard UDS is not equipped to identify the presence of the newer designer drugs, leaving clinicians ill-equipped to treat acutely toxic patients. Currently, several new diagnostic tools are being evaluated to identify designer drug toxicity, including high-performance liquid chromatography with tandem mass spectrometry (HPLC-TMS), transporter flux assays with mass spectrometry, enzyme-linked immunosorbent assays (ELISA) and liquid chromatography-electrospray ionization-mass spectrometry (LCEI-MS). Clinical evaluation may be able to narrow down the toxidrome, allowing a targeted GC-MS or similar diagnostic tool to be completed and identifying the toxidrome while supportive management is provided.

NO. 79

THE IMPACT OF PTSD AND PERCEIVED SELF-EFFICACY ON RESTING STATE FUNCTIONAL CONNECTIVITY IN COMBAT VETERANS

Lead Author: Roseann F. Titcombe-Parekh, M.D., Ph.D.

Co-Author(s): Jingyun Chen, Ph.D., Nadia Rahman, B.A., Nicole Kouri, B.A., Christina Fales, Ph.D., Meng Qian, Ph.D., Meng Li, Ph.D., Richard Bryant, Ph.D., Adam Brown, Ph.D., Charles Marmar, M.D.

SUMMARY:

Psychological trauma is frequently characterized by an adverse experience marked by a lack of control and predictability. Self-efficacy theory describes self-perceptions of capability constructed by individuals that powerfully influence personal command over one's thoughts, behaviors and emotions, as well as the external environment. Theoretical models of self-efficacy and studies of trauma-exposed individuals have shown a correlation between one's perceived self-efficacy or believed ability to overcome the negative impact of a traumatic event and their actual level of resilience or PTSD symptoms. In an effort to further understand the neurobiological correlates and cognitive mechanisms that underlie PTSD, fMRI was used to measure resting state functional connectivity (rsFC) in brain regions responsible for affective processing and reframing, future thinking, self-reflection and memory. A group of 57 combat veterans, including 24 subjects with PTSD (PTSD+) and 33 without PTSD (PTSD−), were randomized to high self-efficacy (HSE) induction protocol or no induction control (NSE) groups. Subjects who underwent HSE induction were asked to recall, in detail, an autobiographical memory reflecting a time in which they demonstrated high self-efficacy prior to fMRI data acquisition. The rsFCs were computed among selected regions of interest (ROIs) and compared between the PTSD− and PTSD+ groups, as well as the HSE and NSE groups. Results show increased connectivity between the amygdala, prefrontal cortex and default mode network regions, specifically the posterior cingulate cortex and precuneus, in subjects with PTSD compared to veterans without PTSD. Interestingly, results also suggest that high self-efficacy induction is associated with reduced connectivity between the orbitofrontal cortex and both the amygdala and hippocampus, reciprocal connections shown to be important for emotional regulation and the integration of fear in decision making. Furthermore, high self-efficacy induction was associated with enhanced connectivity among the lateral and ventral prefrontal cortices, cingulate cortex, retrosplenial cortex, hippocampus, caudate and ventral precentral gyrus, regions that have been implicated in cognitive control over affectively salient material, future-thinking and facial expression. These results illustrate differences in resting state connectivity in individuals with clinically significant psychological trauma and demonstrate neural correlates for a possible new therapeutic approach to the treatment of PTSD.

NO. 80

CHANGES IN CHILD AND ADOLESCENT PSYCHIATRIC CLIENTS' PRESCRIPTIONS FOLLOWING NEW REGULATORY REQUIREMENTS IN CALIFORNIA

Lead Author: Evan J. Trager, M.D.

Co-Author(s): Richard J. Lee, M.D.

SUMMARY:

Background: Concern over the increasing prevalence of psychotropic medication use among children and adolescents has led to regulatory changes in a number states; in California, this took the form of requirements that prescriptions for antipsychotic medications for individuals under 18 years old enrolled in Medi-Cal (the name for the California

Medicaid program) be preapproved via a treatment authorization request (TAR) form. This change went into effect on October 1, 2014. Prescribing data in Riverside University Health System Behavioral Health (RUHSBH) was analyzed to determine if this regulatory requirement had its intended impact. **Methods:** We undertook a cross-sectional analysis that examined the proportion of prescriptions written for clients of the RUHSBH clinics who were under 18 during two three-month periods before and after this regulatory requirement went into effect. Data were also collected enumerating the number of prescriptions for other classes of medications. **Results:** We found a statistically significant decrease in antipsychotic medications as a class, both overall and across the subgroups of individual age 6–12 and 13–17 (relative risks of 0.62, 0.49 and 0.65, respectively). The analysis also demonstrated a temporally concurrent increase in antidepressant medication prescriptions as a class for the overall group (relative risk 1.24). **Discussion:** It appears that the regulation-mandated TAR requirement had the desired effect of reducing initiation of antipsychotic prescriptions in the studied population: children and adolescents seen within the RUHSBH system. We posit that the concurrent increase in antidepressant prescriptions in this time period may represent an alternative prescribing practice designed to ensure clinical stability in a timely manner. We propose that further research is warranted to determine whether these changes in prescribing patterns will remain henceforth. In addition, a comparison to the prescribing patterns of providers working with non-Medi-Cal clients that are not subject to the regulatory rules would strengthen the analysis of this regulatory impact. We acknowledge limitations including the lack of full demographic data in the dataset, information on the primary diagnosis or clinical justification for the provider's prescriptions.

NO. 81

PRELIMINARY FINDINGS FROM THE SMARTPHONE AND ONLINE USAGE-BASED EVALUATION FOR DEPRESSION (SOLVD) STUDY: CLINICAL AND ELECTRONIC DATA AGREEMENT

Lead Author: Anh L. Truong, M.D.
Co-Author(s): Jian Cao, B.S., Peter Washington, M.S., Nidal Moukaddam, M.D., Ph.D., Asim Shah, M.D., Ashutosh Sabbharwal, Ph.D.

SUMMARY:

Background: Depression is a serious illness that carries significant emotional and financial burden for modern society. Depression severity is often monitored through clinician psychometric instruments, but interest in incorporating online and phone-based assessments is increasing as technology becomes more integrated into health care. **Objective:** Our study evaluates if mobile daily mood ratings may be clinically useful in monitoring and classifying depression symptoms in a clinically depressed population compared to standard clinician psychometric instruments including the Patient Health Questionaire-9 (PHQ-9), Hamilton Rating Scale for Depression (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A). **Methods:** Twenty-two patients with diagnoses of major depressive disorder with or without comorbid anxiety disorder were identified and recruited. A diagnosis of depression was confirmed through the Mini International Neuropsychiatric Interview (MINI). Over an eight-week period, daily moods were self-reported through the Smartphone and Online Usage Based Evaluation for Depression (SOLVD) application, a mobile assessment application downloaded onto patients' mobile devices. Depression and anxiety symptoms were also measured biweekly using the HAM-D, HAM-A and PHQ-9. **Results:** The correlation between self-reported mood score using the smartphone application averaged over a two-week period and the bi-weekly PHQ-9 score was 0.73 in the moderate/severe group and 0.36 in the normal/mild group. HAM-D had a correlation with the raw mood scores of 0.5 in the moderate/severe group and 0.003 in the normal/mild group. HAM-A had a correlation of 0.47 in the moderate/severe group and 0.15 in the normal/mild group. The mood reporting ranges were larger for the moderate/severe group, with a standard deviation of 17.05, compared to 8.06 for the normal/mild group. **Conclusion:** Smartphone applications such as SOLVD represent a useful way to monitor depressive symptoms in a clinically depressed population and correlate with current gold-standard clinician-administered psychometric instruments. Our data suggest that populations with moderate to severe depression have better correlation between self-reported mood and clinically administered questionnaires when compared to individuals with mild depression. Most available literature highlights the potential use of smartphone applications for depression screening, but this is the first study reporting on usefulness in clinically depressed populations who may benefit from extra support in

the pursuit of treatment. Results are preliminary because of small sample size and need to be replicated in larger studies. **Keywords:** Depression, Anxiety, Smartphone, SOLVD, Mobile Device

NO. 82

SCORES ON NIH TOOLBOX PATTERN COMPARISON PROCESSING SPEED TEST ARE NEGATIVELY CORRELATED WITH PLASMA LEVELS OF IL-10 IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Hema Venigalla, M.B.B.S.
Co-Author(s): Titilayo Makanjuola, Ruchir Arvind Patel, Ramandeep S. Kahlon, Satyajit Mohite, Sumana Goddu, Osarhiemen Aimienwanu, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:

Background: Immune activation and inflammation have been implicated in the pathophysiology of schizophrenia. Cytokines are key proteins involved in immune system activation and have been associated with psychopathology and cognition in patients with schizophrenia. However, the association of plasma cytokines with the NIH Toolbox Pattern Comparison Processing Speed Test has not been evaluated in patients with schizophrenia. We therefore evaluated the correlation of plasma cytokines with scores on the NIH Toolbox Pattern Comparison Processing Speed Test. **Methods:** Ten patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) completed the NIH Toolbox Pattern Comparison Speed Processing Test a few hours after having fasting blood drawn for evaluation of plasma cytokines (interferon gamma [IFN-Î³], interleukin 1 beta [IL-1β], interleukin 2 [IL-2], interleukin 6 [IL-6], interleukin 10 [IL-10] and tumor necrosis factor alpha [TNF-α]). Cytokines were measured using ELISA. All the patients were receiving antipsychotic medication. We calculated Spearman rank correlations between scores on the Pattern Comparison Speed Processing Test and plasma cytokines. **Results:** The NIH Toolbox Pattern Comparison Processing Speed Test was negatively correlated with IL-10 (ρ=−0.672, p=0.047), but it was not associated with the other cytokines. **Conclusion:** The preliminary results of this study suggest that processing speed is negatively correlated with plasma levels of IL-10 in patients with schizophrenia. This finding is consistent with results from a recent study involving first-episode drug-naïve patients with schizophrenia, even though cognitive function was not measured with the NIH Toolbox Pattern Comparison Speed Processing Test in that study. Larger, prospective studies are needed to further evaluate the role of IL-10 in cognition in patients with schizophrenia. **Keywords:** Schizophrenia, NIH Toolbox Pattern Comparison Speed Processing Test, IL-10.

NO. 83

FEASIBILITY AND ACCEPTABILITY OF IMPLEMENTING TELEPSYCHIATRY FOR MONOLINGUAL SPANISH SPEAKERS IN A COMMUNITY BEHAVIORAL HEALTH SYSTEM

Lead Author: Christopher White, M.D.
Co-Author(s): Melanie Thomas, M.D., M.S., James Dilley, M.D., Amelie Meltzer, B.S., Christina Mangurian, M.D., M.A.S.

SUMMARY:

Background: Telepsychiatry allows psychiatrists to evaluate, diagnose and treat patients through HIPAA compliant video conferencing technology. Comparable patient satisfaction and treatment outcomes have been demonstrated between telepsychiatry and face-to-face psychiatry. It has been suggested that telepsychiatry might reduce stigma associated with seeking mental health care. However, to our knowledge, no one has examined an association between mental health stigma and acceptability of telepsychiatry. Given the rapid adoption of telepsychiatry to combat a shortage of psychiatrists, investigating whether this modality is acceptable to a wide range of vulnerable populations is critical. **Objective:** The purpose of our quality improvement study is to investigate the feasibility and acceptability of implementing telepsychiatry in a small community clinic for a mostly monolingual Spanish population. As an exploratory outcome, we will examine whether satisfaction with telepsychiatry varies according to the level of stigma reported by the patient. **Methods:** To assess feasibility and acceptability, we will collect both process and outcome measures. The process outcomes include number of patients served in one small community behavioral health clinic and length of each telepsychiatry session. We will collect basic demographic factors including age, gender, race/ethnicity and primary mental health diagnosis. Each participant will complete a survey of validated scales, including a telepsychiatry acceptability rating scale and a stigma scale. We will use descriptive statistics to describe the population and the acceptability of telepsychiatry for this small sample. **Results:** Approximately 20 predominantly monolingual Spanish-speaking adults have used this

new telepsychiatry service. Additional results of the study, completed in April 2016, will be presented. **Conclusion:** We expect to show that telepsychiatry will be feasible and acceptable in this population. This study has broad implications given the growing shortage of psychiatrists, especially for certain underserved populations such as monolingual Spanish speakers.

NO. 84

PERSONALITY DISORDER COMORBIDITY IN MAJOR DEPRESSION INPATIENT TREATMENT: AN ANALYSIS OF ROUTINE DATA FROM THE GERMAN VIPP DATASET

Lead Author: Hauke F. Wiegand, M.D., Ph.D.
Co-Author(s): Frank Godemann, Dr.Med.

SUMMARY:

Background: Major depressive disorder (MDD) is one of the most important health problems in the developed world. Personality disorders (PDs) are a frequent comorbidity of MDD. Only limited evidence exists on how a PD comorbidity influences MDD inpatient treatment course and outcome. This study was a descriptive analysis of inpatient routine data to find out how a secondary diagnosis of PD in patients with MDD influences indicators of treatment course and treatment intensity. These indicators were 1) Rate of recurrent disease; 2) Episode severity; 3) Rate of emergency admissions; 4) Readmission rates after 30, 90 and 356 days; 5) Average length of stay; 6) Rate of discharge against medical advice; 7) Number of therapy units, a measure for individual care by therapist and nursing staff; 8) Rates of add-on codes indicating complex diagnostic procedures, crisis intervention and one-on-one care; and 9) Rates of patients classified in the accounting category “intensive care." **Methods:** Descriptive analysis of data from the VIPP dataset from 47 psychiatric hospitals, including 28,207 cases of MDD from 2012, was completed. In the process of introducing a new remuneration system, all psychiatric and psychosomatic hospitals in Germany are obliged to collect routine data. For research purposes, the VIPP (Versorgungsindikatoren in Psychiatrie und Psychosomatik means routine care indicators in psychiatry and psychosomatics) database duplicates this routine data in a subsample of hospitals and enriches it with supplementary information. **Results:** 18.85% of all cases with a main diagnosis of MDD (F32/F33/F34) had a secondary diagnosis from the PD (F60/F61) spectrum. In comparison to patients with MDD without PD comorbidity, patients with MDD and a secondary PD diagnosis had more often recurrent depression, more often a more rapid readmission and more often emergency admissions. They received more TEs, as well as more add-on codes indicating complex diagnostic procedures, crisis intervention and one-on-one care They were classified more often in the “intensive treatment” category. The length of hospital stay did not differ much. Comparison is limited to the available routine data indicators. **Conclusion:** PD comorbidity complicates MDD treatment. The findings support implementation of specialized treatment strategies for MDD with comorbid PD in routine treatment practice.

NO. 85

KNOWLEDGE OF AND ATTITUDES TOWARD ALCOHOL USE AND ALCOHOLISM AMONG BAR TENDERS AND RUM SHOPKEEPERS IN SAINT VINCENT AND THE GRENADINES

Lead Author: Maryam Zafer, M.S.
Co-Author(s): Shiyuan Liu, Ynolde Smart, R.N., Karen Providence, M.D., Craig L. Katz, M.D.

SUMMARY:

Background: Mt. Sinai and the Ministry of Health and the Environment of St. Vincent and the Grenadines (SVG) have jointly worked on initiatives to address excessive alcohol use on the main island of St. Vincent since 2012. A 2010 World Health Organization report found a 5.7% prevalence rate of alcohol use disorders in this Caribbean nation. In a 2014 Photo Voice project, community members involved with an Alcoholics Anonymous group theorized that bar tenders and rum shopkeepers could play a role in primary prevention of alcohol abuse and alcoholism due to their ability to regulate alcohol sales. **Objective:** Determine bar tenders’ and rum shopkeepers’ knowledge of and attitudes toward alcohol use and alcoholism. Gauge willingness among this population to participate in interventions targeting problem drinking. **Methods:** Thirty bar tenders and rum shopkeepers participated in semi-structured interviews exploring their perspective on the drinking culture in St. Vincent. Convenience sampling was used to identify participants from three towns—Barrouille, Kingstown and Calliaqua—and ten interviews were conducted in each location. Using the grounded theory method, code and domains were extracted from interview transcripts. Final themes were reached via consensus among the investigators.

Results: Bartenders and rum shopkeepers have mixed views on the extent of drinking as a public health problem and perceive alcoholism to have low prevalence in St. Vincent. They report using their position to regulate problem drinking: they refuse to sell alcohol to drunken customers and instead leverage established relationships with these patrons to encourage them to stop drinking. A customer's health, as well as keeping drunkenness out of establishments, takes priority over the economic benefit of selling more alcohol. However, bar tenders and rum shopkeepers perceive their role in interventions targeting problem drinking to be limited—they commented that communities lack regulations on alcohol abuse, so other shops might sell to drunk customers anyway, and governmental initiatives would have more power to change the drinking culture. **Conclusion:** The Vincentian Ministry of Health and the Environment should not prioritize training bar tenders and rum shopkeepers as an approach to address alcohol abuse.

NO. 86

BRAIN REGIONAL HOMOGENEITY UNDERLYING ASTHMA WITH HEALTH ANXIETY

Lead Author: Yuqun Zhang
Co-Author(s): Yingying Yin, Yuan Yang, Rongrong Bian, Zhenghua Hou, Yingying Yue, Yonggui Yuan

SUMMARY:

Background: Health anxiety (HA) is common in asthmatic patients, but the biological underpinnings of HA in asthmatic patients remains unknown. Therefore, the aim of this study is to discover the brain regional homogeneity (ReHo) underlying asthma and HA. **Methods:** Twenty-eight patients and 30 age- and gender-matched controls received resting-state functional magnetic resonance imaging (rs-fMRI) scan and HA assessment. **Results:** The prevalence of HA in asthmatic patients was significantly higher than healthy controls (HCs). Compared to HCs, asthmatic patients showed increased ReHo in the left temporal cortex, anterior cingulated cortex (ACC) and right somatosensory cortex (SMC), and there were positive correlations between the ReHo value in the right SMC and the Chinese version Short Health Anxiety Inventory (CSHAI) total score, as well as illness likelihood (IL) score. **Conclusion:** HA in asthmatic patients was serious. Asthmatic patients may have more awareness of their body, which would generate more serious HA.

NEW RESEARCH POSTER 2

NO. 1

EXPLORING THE ASSOCIATION BETWEEN THE SEVERITY OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER AND SMARTPHONE USE

Lead Author: Abdullah Akpinar, M.Med.
Co-Author(s): Kadir Demirci, Cafer Cagri Korucu, Mehmet Akgonul

SUMMARY:

Background: ADHD has been known to be one of the risk factors for problematic use of technological devices, such as watching television, playing video games and Internet use. However, the significance of ADHD in the problematic use of smartphones has not yet been investigated. This study determined the possible association between the severity of ADHD symptoms and smartphone use among university students. **Methods:** We employed a cross-sectional study design. The Adult ADHD Self-Report Scale (ASRS) and the Smartphone Addiction Scale (SAS) were administered to 363 university-level medical students who were also smartphone users. **Results:** 204 students were classified into the non-ADHD group, 129 into the probable ADHD group and 30 into the highly probable ADHD group. Statistically significant differences were observed between the three groups in terms of the SAS scores ($p<0.001$). Students with high risk of smartphone addiction had higher total ADHD scores and higher subscores on inattention and hyperactivity/impulsivity than those with low risk of smartphone addiction ($p<0.001$). Positive correlation was found between SAS total score and ASRS total score ($r=0.251$, $p=0.001$) as well as subscores of attention ($r=0.243$, $p=0.001$) and hyperactivity/impulsivity ($r=0.239$, $p=0.001$). **Conclusion:** The severity of ADHD symptoms was significantly associated with the severity of smartphone addiction, indicating that ADHD might be a risk factor for smartphone addiction among university students. Prevention of smartphone addiction may be difficult for those with high risk of ADHD because of their vulnerability.

NO. 2

SLEEP-DEPENDENT EMOTIONAL MEMORY CONSOLIDATION

Lead Author: Rebecca M. Allen, M.D., M.P.H.
Co-Author(s): Robert Stickgold, Ph.D.

SUMMARY:

Background: Sleep has long been established as a time of memory consolidation. Although the role of sleep in memory consolidation has been extensively studied in normal subjects, little is known of how this is altered in psychiatric populations. The primary aim of this study is to collect preliminary data on the dependency of sleep on consolidation of a new visuospatial emotional memory task. A subsequent protocol will then use this task to test the hypothesis that sleep-dependent memory consolidation is impaired in individuals with depression. **Methods:** This study uses a novel verbal-spatial emotional memory task where subjects memorize the locations of positive, negative and neutral words on a grid in a repeated measures design where all subjects do a sleep and a wake condition. **Conclusion:** This study adds to the literature by comparing the sleep-dependent consolidation not just of memory, but of emotionally valenced memory. A subsequent protocol will then compare sleep-dependent emotional memory consolidation in depressed versus normal subjects. If sleep-related processing of emotional memory is impaired in depression, this may be part of the pathophysiology of the disease contributing to maintenance of depressed mood and could be a treatment target.

NO. 3

SUICIDE IDEATION AND BEHAVIOR ASSESSMENT TOOL (SIBAT): A NOVEL MEASURE OF SUICIDAL IDEATION/BEHAVIOR AND PERCEIVED SUICIDE RISK

Lead Author: Larry D. Alphs, M.D., Ph.D.
Co-Author(s): Carla M. Canuso, David Williamson

SUMMARY:

Background: Worldwide, suicide is one of the more preventable types of death. Clinicians wanting to monitor suicidal ideation, behavior and risk require a tool that includes all of these components and distinguishes nonsuicidal, self-inflicted injuries from suicide-related injuries. Ideally, it should permit assessment of changes that occur as a result of intervention. **Methods:** A consortium of experts in scale development, suicidology and clinical management of suicidal patients met over three years to develop the Suicide Ideation and Behavior Assessment Tool (SIBAT), which is organized into 10 modules that allow for efficient, comprehensive data collection. The SIBAT is divided into patient self-report and clinician-rated sections. Its modular structure allows for customization, and the administration of specific modules can be adjusted to meet clinicians' needs. Thus, responses less susceptible to change (e.g., demographics, medical history) are segregated into modules distinct from responses that fluctuate more rapidly (e.g., suicidal ideation). **Results:** The SIBAT Consortium developed a provisional version of the SIBAT based on a precursor instrument (the ISST-Plus), their extensive clinical experience and reviews of the suicide literature. During revisions of provisional versions of the SIBAT, modules were added and item structures refined. A draft version agreed upon by the SIBAT Consortium was reviewed in an emergency department setting by two groups of patients at various degrees of risk for suicide and subsequently by 686 members of PatientsLikeMe, an online patient community, who self-identified as being at risk for suicide. All participants evaluated items from the SIBAT's patient-reported modules in terms of semantic clarity, relevance of questions and adequacy of response choices. After each of these three sets of reviews, the SIBAT was revised based on consensus from members of the SIBAT Consortium. A psychometric evaluation study to examine reliability and validity of a computerized version of the instrument is planned. This study will also include exploratory factor analyses and item response theory analyses. **Conclusion:** The SIBAT facilitates comprehensive assessment and storage of patient-reported data related to suicidal ideation, behavior and clinician assessment of risk. Its flexible, modular structure and electronic interface allow for efficient data collection. Its patient-reported modules provide a broad, standardized background of information for clinical judgments of imminent and long-term suicide risk. The validation of this instrument will support its broad application across patient populations with suicidal ideation. The SIBAT's structure will provide the possibility of its being accessed from a website or being made available to suicide prevention centers or nonpsychiatrists who examine suicidal patients but are uncertain what data to collect for expert consultants.

NO. 4

A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF DEUTETRABENAZINE FOR THE TREATMENT OF TARDIVE DYSKINESIA (ARM-TD)

Lead Author: Karen E. Anderson, M.D.
Co-Author(s): Stewart A. Factor, D.O., Robert A. Hauser, M.D., Joohi Jimenez-Shahed, M.D., William Ondo, M.D., L. Fredrik Jarskog, M.D., Herbert Y.

Meltzer, M.D., Scott W. Woods, M.D., David Stamler, M.D., Hubert H. Fernandez, M.D.

SUMMARY:

Objective: Determine the efficacy and safety of deutetrabenazine as a treatment for abnormal involuntary movements due to tardive dyskinesia (TD). **Background:** TD is an often irreversible movement disorder characterized by abnormal, involuntary movements that can affect any body part, especially the oro-buccal-lingual regions. TD is caused by exposure to dopamine receptor antagonists. VMAT2 inhibition has shown efficacy in TD. Deutetrabenazine is a novel, selective VMAT2 inhibitor that contains deuterium, a naturally occurring, non-toxic form of hydrogen that extends active metabolite half-lives and minimizes drug concentration fluctuations. **Methods:** Patients with moderate to severe TD were randomized 1:1 to deutetrabenazine or placebo in this double-blind, placebo-controlled, parallel-group study. Study drug (12–48mg/day) was titrated over six weeks to optimal dyskinesia control, followed by a six-week maintenance period. Key eligibility criteria included an Abnormal Involuntary Movement Scale (AIMS) score ≥6, stable psychiatric illness (if present) and stable dosing of psychoactive medications, including antipsychotics. Assessments were performed at baseline (BL) and up to week 12. The primary endpoint was the change in AIMS, items 1 through 7, from BL to week 12 as assessed by blinded video ratings performed by movement disorder specialists. The key secondary endpoint was the proportion of patients “much or very much” improved at week 12 on the Clinical Global Impression of Change (CGIC). Adverse events (AEs) were monitored throughout the study. **Results:** 117 patients from 46 sites in the U.S. and Eastern Europe received deutetrabenazine (n=58) or placebo (n=59). Based on an ITT analysis, deutetrabenazine patients showed a significant reduction in mean AIMS scores compared to placebo at week 12 (3.0 [SE=0.45] vs. 1.6 [SE=0.46], p=0.019). On the CGIC, 48.2% of deutetrabenazine patients were “much or very much improved” versus 40.4% for placebo at week 12 (p=0.40). For deutetrabenazine and placebo participants with blinded video AIMS ratings ≥6 at BL (n=97), mean AIMS scores decreased by 3.5 (SE=0.49) vs. 1.8 (SE=0.44) (p=0.017), and on the CGIC, 52.1% and 34.7% of patients were “much or very much improved” at week 12 (p=0.084). Treatment-emergent AEs were reported in 70.7% of deutetrabenazine patients compared to 61% of the placebo group. The most common AEs reported for deutetrabenazine and placebo groups were somnolence (n=8 [13.8%] vs. n=6 [10.2%]) and headache (n=4 [6.9%] vs. n=6 [10.2%]). Deutetrabenazine and placebo showed similar low rates of psychiatric AEs, such as psychosis (n=1 [1.7%] vs. n=0) and suicidal ideation (n=0 vs. n=1 [1.7%]). One (1.7%) deutetrabenazine patient withdrew due to AEs versus two (3.4%) in the placebo group. **Conclusion:** Deutetrabenazine significantly reduced abnormal involuntary movements and was generally well tolerated in patients with TD with a favorable safety profile and a low withdrawal rate.

NO. 5

SUBCHRONIC VORTIOXETINE TREATMENT –BUT NOT ESCITALOPRAM- ENHANCES PYRAMIDAL NEURON ACTIVITY IN THE RAT PREFRONTAL CORTEX

Lead Author: Francesc Artigas, Ph.D.

Co-Author(s): Connie Sánchez Ph.D. 3, Pau Celada Ph.D. 1,2, Maurizio S. Riga Bc. 1,2

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SUMMARY:

Background: Vortioxetine (VOR) is a multimodal antidepressant drug. VOR is a 5-HT3-receptor (R), 5-HT7-R and 5-HT1D-R antagonist, 5-HT1B-R partial agonist, 5-HT1A-R agonist, and serotonin (5-HT) transporter (SERT) inhibitor. VOR shows procognitive activity in animal models and improves cognitive function in patients with major depressive disorder. **Methods:** We compared the effect of subchronic (14-day) treatments with VOR and escitalopram (ESC), a selective serotonin reuptake inhibitor (SSRI), on neuronal activity in the medial prefrontal cortex (mPFC). Ten groups of rats (five standard, five depleted of 5-HT with pCPA, used as model for cognitive impairment) were fed control food or VOR-containing food (two groups, low and high doses) or implanted with minipumps delivering vehicle (VEH) or ESC 10mg/kg/day s.c. The two VOR doses occupy SERT+5-HT3-R and all targets, respectively, and correspond to SERT occupancies in patients treated with 5 and 20mg/day, respectively. Putative pyramidal neurons were recorded extracellularly in anesthetized rats. 614 neurons were recorded in standard rats and 580 neurons in pCPA-treated rats

(21–27 neurons/rat). **Results:** pCPA induced a 94% depletion of 5-HT in the mPFC (48±4 vs. 804±74fmol/mg in standard and pCPA-treated rats; n=25 each; p<0.00001). Subchronic administration of low and high doses of VOR enhanced the discharge of the recorded neurons in standard and pCPA-treated rats (standard rats: from 0.9±0.1 [controls] to 2.1±0.2 [low VOR] and 1.5±0.1spikes/s [high VOR]; pCPA-treated rats: from 0.9±0.1 [controls] to 2.0±0.2 [low VOR] and 1.9±0.2spikes/s [high VOR]). In contrast, subchronic ESC treatment did not affect the firing rate of mPFC pyramidal neurons in either standard or pCPA-treated rats (standard rats: from 0.8±0.1 to 0.7±0.1spikes/s; pCPA-treated rats: from 0.9±0.1 to 0.8±0.1spikes/s). **Conclusion:** These results indicate that subchronic doses of VOR (but not ESC) increased the discharge rate of putative PFC pyramidal neurons under standard and 5-HT-depleted conditions. The high-VOR dose evoked a more marked effect in pCPAâ€treated rats than in standard rats. VOR effect was greater in infralimbic (IL) than in prelimbic (PrL) subdivisions of mPFC. Hence, VOR doses occupying SERT at clinically relevant levels increase mPFC neuronal discharge in standard and 5-HT-depleted conditions. The effect in the latter group cannot be explained by an antagonist action of VOR at 5-HT3-R and suggests a non-canonical interaction of VOR with 5-HT3-R. These mechanisms may underlie vortioxetine's beneficial effects on cognitive function.

NO. 6

MOOD STABILIZER THERAPY FOR BIPOLAR DISORDER ALSO TREATS COMORBID CHRONIC PAIN

Lead Author: David M. Ash, M.D., M.B.A., M.S.
Co-Author(s): Yajie Yu, Saila Bysani, Kari Malwitz, Oluwole Popoola, Adam Brown

SUMMARY:

Objective: Scrutinize the relationship between bipolar affective disorder and chronic pain. Specifically, does treatment with mood stabilizer therapy improve chronic pain? **Methods:** A retrospective study was conducted on subjects who were inpatient from 2010 to 2014 at University Hospital in Columbia, Missouri. 1,565 subjects with bipolar disorder and comorbid chronic pain diagnoses were initially identified. After exclusion criteria were applied, 45 subjects were included in this pilot study. The outcome variables were patient-rated pain scores and Clinical Global Improvement (CGI) scores. CGI scores were determined by tracking symptoms of bipolar disorder from admission to discharge. Exposure variables included mood stabilizers, lithium and carbamazepine alone or in combination with atypical antipsychotics, quetiapine, lurasidone, risperidol, aripiprazole, olanzapine, and ziprasidone. Mean pain scores were compared for improvement after treatment with mood stabilizers and in combination with atypical antipsychotic medications. Pain scores were characterized with descriptive statistics and one-way ANOVA analysis to determine p-values. **Results:** Mean pain scores after therapy with carbamazepine dropped by 1.5 (p=0.04), whereas lithium therapy showed a decrease of 3 (p=0.05). Clinical improvement was correlated with a decrease in pain scores as well as by CGI scores. The combination of an atypical antipsychotic medication with a mood stabilizer was assessed, and combining atypical antipsychotics caused a statistically insignificant increase in pain score (p=0.45). There were two exceptions. Aripiprazole combined with lithium or carbamazepine may decrease pain scores, and a combination of quetiapine and lithium may decrease pain scores. **Conclusion:** Analysis of daily pain scores after mood stabilizer therapy showed a significant improvement in pain scores; however, augmentation of mood stabilizer therapy with atypical antipsychotics increased pain scores with the exception of aripiprazole. Monotherapy of a mood stabilizer such as lithium or carbamazepine may provide significant analgesia, but augmentation with an atypical may eliminate this analgesic effect.

NO. 7

ATYPICAL NEUROLEPTIC MALIGNANT SYNDROME: DIAGNOSTIC DILEMMAS AND TREATMENT CHALLENGES

Lead Author: Hafizullah Azizi, M.D.
Co-Author(s): Jinny Kim, M.D., Abdul Brula, M.D., Victoria Balkoski, M.D.

SUMMARY:

Neuroleptic malignant syndrome (NMS) is a life-threatening neuropsychiatric emergency. While classically associated with the use of first-generation antipsychotics, every class of neuroleptic drug has been implicated, including the second generation (atypical) as well as antiemetic drugs. NMS is typically characterized by a distinctive clinical syndrome of mental status change, rigidity, fever and dysautonomia. However, case reports and several reviews have highlighted a propensity for NMS induced by second-generation antipsychotics to present in an atypical manner. Such reports raise

a question about the clinical utility of existing NMS criteria. In this study, we report two cases of NMS with atypical presentation caused by second-generation antipsychotics. **Case:** 1) A 48-year-old female with a history of bipolar disorder began aripiprazole. She presented with a high serum creatine kinase (CK) level of 3,500units/L, altered mental status and dysautonomia, suggestive of NMS. Aripiprazole was discontinued. Confusion resolved, but she remained psychotic. Clonazepam was started, and on day 28, ziprasidone was added. Psychosis improved, but loss of alertness, loss of orientation and elevated CK (1,800units/L) returned. Ziprasidone was discontinued. Lorazepam was initiated with improvement; the patient was stabilized and discharged on chlorpromazine for persistent psychosis. 2) A 64-year-old male with a history of schizophrenia on clozapine 750mg/d presented with confusion, elevated CK (155,000units/L), rigidity and clonic movements. CVA was ruled out. Clozapine was held and reintroduced after stabilization. The patient's mental status again declined, and he developed fever and cogwheel rigidity, this time without elevated CK. The patient was initially stabilized on benzodiazepine, but eventually needed to be treated with electroconvulsive therapy (ECT) for severe psychosis. **Discussion:** NMS is defined by its association with a class of medications that block dopamine transmission and a tetrad of distinctive clinical features: fever, rigidity, mental status changes and autonomic instability. However, the classical presentation is uncommon. In the absence of clear diagnostic criteria, NMS remains a challenging entity diagnostically and therapeutically. These cases highlight two points. First, phenomenologically, NMS may present differently with different antipsychotics. Second, the clinical picture of NMS can be dramatically different in the same patient at different times or episodes. Moreover, as the above cases illustrate, successful treatment may require different modalities. The first case responded to benzodiazepines and a first-generation antipsychotic, and the second required ECT. Further research is needed on this life-threatening condition to better understand its pathophysiology, standardize diagnostic criteria for early identification and devise evidence-based treatment options to reduce typically prolonged mobility and mortality.

NO. 8

EFFECT OF ADJUNCTIVE BREXPIPRAZOLE ON COGNITIVE AND PHYSICAL FUNCTIONING IN FIVE EXPLORATORY, OPEN-LABEL STUDIES ON MAJOR DEPRESSIVE DISORDER

Lead Author: Ross A. Baker
Co-Author(s): Peter Zhang, Catherine Weiss, Aleksandar Skuban, Emmanuelle Weiller

SUMMARY:

Background: Fatigue and cognitive dysfunction are common in major depressive disorder (MDD). 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/2C receptors. Brexpiprazole was approved in July 2015 by the FDA for use as an adjunctive therapy to antidepressants (ADTs) for the treatment of MDD. Here, we evaluate the effect of adjunctive brexpiprazole on cognitive and physical function assessed by the Cognitive and Physical Functioning Questionnaire (CPFQ), based on data from five exploratory, open-label studies of adjunctive brexpiprazole in patients with MDD. **Methods:** Five exploratory, open-label studies were conducted in patients with MDD, an inadequate response to ADTs, and one of the following factors: 1) sleep disturbances [NCT01942733], 2) irritability [NCT01942785], 3) inadequate response to adjunctive treatment [NCT02012218], 4) anxiety symptoms [NCT02013531], or 5) young patients at work or school [NCT02013609]. Patients received ADT+brexpiprazole 1–3mg/day (target dose: studies 1 and 2: 3mg/day; studies 3–5: 2mg/day). The CPFQ is a patient-rated scale designed to assess cognitive and executive dysfunction, including symptoms of fatigue. The CPFQ consists of seven items, each rated on a scale from 1 (greater than normal functioning) to 6 (poorer than normal functioning). The total score of the seven items ranges from 7 to 42. The CPFQ was used in all five studies, with assessments at baseline and week 6 (studies 2–4), week 8 (study 1) and week 12 (study 5). The Montgomery-Åsberg Depression Rating Scale (MADRS) was used in all studies for assessment of depressive symptoms. **Results:** At baseline, mean MADRS total scores were in the range of 28.3 (studies 1 and 5) to 30.3 (study 4). Improvements were observed in MADRS total score from baseline to week 6/8/12 in patients treated with ADT+brexpiprazole; changes from baseline to weeks 6, 8 and 12 were −14.2 (study 2) to −19.6 (study 4), −16.0 and −18.1, respectively. CPFQ total scores at baseline ranged from 26.1 (study 5) to 29.3 (study 3). Improvements were observed in CPFQ total scores

from baseline to week 6/8/12 in patients treated with ADT+brexpiprazole; changes from baseline to weeks 6, 8 and 12 were −7.7 (study 2) to −9.9 (study 4), −8.4 and −8.1, respectively. **Conclusion:** Baseline CPFQ scores indicated high levels of dysfunction in all five studies. Meaningful decreases from baseline to study endpoint in all five open-label, exploratory studies indicated improvements in cognitive function and increased energy/alertness after adjunctive treatment with brexpiprazole, which were paralleled by similarly meaningful improvements in depressive symptoms.

NO. 9

ANTIVIRAL-INDUCED DEPRESSION: A CASE STUDY

Lead Author: Michael Reid Bowes, D.O.
Co-Author(s): Madeline Teisberg, D.O., Kyle Gray, M.D.

SUMMARY:

This is the report of a 19-year-old military academy cadet readmitted to inpatient psychiatry following recent discharge for antiviral-induced depression. The cadet was brought to the emergency department after a suicidal reference made to his primary care physician. The patient's previous psychiatric hospitalization occurred following the development of depressive symptoms of depression and anxiety one week after he was started on valacyclovir for HSV1. Within two weeks of stopping Valtrex, the patient's symptoms had remitted, and he returned to his prior baseline mental status. The patient then underwent a trial of acyclovir, leading to a reoccurrence of his depressive/anxious symptoms. During the interview, the patient mentioned that he has chronic sleep deprivation secondary to his significant academic and athletic responsibilities, and during the mental status exam, he was SIGECAPS pan positive, as well as endorsed multiple anxiety symptoms. The patient has no significant family history for psychiatric disorders, and he has no medical or psychiatric history prior to this. The physical exam, mental status exam and laboratory values were all fairly benign, except for a slight hypothyroidism (TSH 5.1 and FT4 1.01). This case illustrates a high-functioning individual with no previous psychiatric history who developed significant depressive and anxious symptoms in the context of antiviral use. The likely causal connection is further strengthened by the recurrence of symptoms following crossover to a second antiviral medication. This case suggests an important organic cause for depression and anxiety that providers should be aware of.

NO. 10

SUICIDE CRISIS SYNDROME AND NEAR-TERM SUICIDAL BEHAVIOR: VALIDATION OF THE SUICIDE CRISIS INVENTORY

Lead Author: Jessica Briggs, B.A.
Co-Author(s): Ori Benhamou, M.D., Deimante McClure, B.A., Zimri Yaseen, M.D., Igor Galynker, M.D., Ph.D.

SUMMARY:

Background: Although acute suicidal states have been identified in existing literature, their syndromic description and relevance to imminent suicidal behavior remain elusive. In this context, we have used the Suicide Crisis Inventory (SCI) to evaluate the intensity of the suicidal crisis syndrome and assess its predictive validity for near-term suicidal behavior. **Methods:** The SCI, a version of the previously used STS-3 suicide risk assessment scale, and a psychological test battery were administered to 201 adult psychiatric patients hospitalized following suicidal ideation (SI) or suicide attempt (SA). The SCI was given both at admission and prior to hospital discharge. The SCI internal structure was assessed using factor analysis with Varimax rotation. Logistic regressions were used to assess the SCI's predictive validity of suicidal behavior in the one- to two-month period following discharge (n=137, 64% f/u rate). **Results:** The SCI exhibited excellent internal consistency with a Cronbach's alpha value of 0.970. The scree plot indicated a five-factor solution comprised of entrapment, panic/dissociation, ruminative flooding, emotional pain and fear of death and accounted for 56.4% of the total variance. The first factor in the unrotated solution was the dominant factor accounting for 43.3% of the variance. The SCI total score at discharge (AUC=0.775) outperformed the score at admission and predicted future suicidal behavior with sensitivity=0.636 and specificity=0.882 (p=0.003, OR=13). The addition of SCI total score at discharge to the most parsimonious model for future suicidal behavior significantly improved this model ($\varsigma\ddagger^2$=5.597, p=0.024, model p=0.001), with AOR=2.02 (p=0.030), and was the sole significant predictor. The entrapment subscale performed similarly, with AOR=2.35 (p=0.034). **Conclusion:** SCI is primarily a state measure describing a single entity, the suicide crisis syndrome. The syndrome intensity, as measured by SCI total score and primarily driven by

the entrapment subscale score, has incremental predictive validity for near-term suicidal behavior. Further SCI validation in diverse patient populations is needed to establish the syndrome stability and the scope of SCI usefulness for the assessment of the acute risk for suicide.

NO. 11

EFFECTIVENESS OF NEUROSTAR TRANSCRANIAL MAGNETIC STIMULATION (TMS) IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER WITH POSTPARTUM ONSET

Lead Author: David G. Brock, M.D.
Co-Author(s): Cris Jagar, M.D., Richard Holbert, M.D., Jeffrey Rado, M.D., Paul Gross, M.D., John Goethe, M.D., G. Randolph Schrodt, M.D., Howard Weeks, M.D., Mark A. Demitrack, M.D.

SUMMARY:

Background: Postpartum depression (PPD) is the most common complication of childbirth, occurring in 10–15% of women in the postpartum period. Pharmacotherapy is a frequently recommended treatment option; however, patient acceptance of psychotropic medication in this setting is limited by maternal concerns regarding infant exposure through breastfeeding. Preliminary evidence has shown promise for the use of transcranial magnetic stimulation (TMS) in patients with PPD. This study (NCT01842542) expands this evidence, examining the antidepressant effectiveness of acute treatment with NeuroStar TMS in patients with major depressive disorder (MDD) with postpartum onset. **Methods:** Medication-free outpatients with unipolar nonpsychotic MDD with postpartum onset and at least moderate symptom severity were enrolled (Edinburgh Postnatal Depression Scale [EPDS]≥10 and 17-item Hamilton Rating Scale for Depression [HAMD17]≥18). Onset of current illness began during the third trimester through six months following live childbirth, and patients were enrolled within nine months after childbirth. Treatment ranged from four to eight weeks of daily left prefrontal NeuroStar TMS. The primary outcome of interest was the change in depressive symptomatology assessed using the EPDS total score. Patient-reported remission on the EPDS was a major secondary outcome measure. **Results:** Nineteen patients were included in the final analysis. Average age was 29.9 (range: 19–39). The EPDS mean baseline score was 20.6 (SD=4.15) with a mean end of acute treatment score of 8.2 (SD=6.50). Fourteen patients achieved remission of symptoms (EPDS≤9) by the end of eight weeks of TMS therapy. There were no serious adverse events, treatment-emergent mania or suicidal ideation. **Conclusion:** NeuroStar TMS is effective as a monotherapy option for the treatment of women with MDD with postpartum onset. A total of 73.7% (n=14) of patients achieved remission of their depressive symptoms with acute TMS treatment. These data suggest that NeuroStar TMS therapy is a promising nonpharmacological treatment alternative for this patient population. This study was funded by Neuronetics, Inc.

NO. 12

EVALUATION OF PALIPERIDONE PALMITATE LONG-ACTING INJECTABLE (LAI) THERAPY IN PATIENTS WITH SCHIZOPHRENIA BY DURATION OF ILLNESS

Lead Author: Brianne Brown, Psy.D.
Co-Author(s): Ibrahim Turkoz, Branislav Mancevski, Maju Matthews

SUMMARY:

Background: Many older guidelines suggest LAI antipsychotics for the treatment of patients with schizophrenia after multiple relapses, so LAIs are often reserved for later stages of illness. Recent guidelines specify LAI use earlier in illness because it may delay functional deterioration. We evaluated paliperidone palmitate LAI therapy in patients with schizophrenia by duration of illness. **Methods:** This was a post hoc analysis of a randomized, double-blind (DB), parallel-group, multicenter, non-inferiority study (NCT01515423). Subjects with schizophrenia were initially treated with paliperidone palmitate once–monthly (PP1M) in a 17-week open-label (OL) phase. Upon meeting clinical stabilization criteria, they were randomized 1:1 to PP1M or paliperidone palmitate once-every-three-months (PP3M) in a 48-week relapse-prevention phase. Subjects were evaluated based on duration of illness (≤5, 6–10 and >10 years since diagnosis), combining the PP1M and PP3M results. Positive and Negative Syndrome Scale (PANSS), Clinical Global Impressions–Severity Scale (CGI-S), and Personal and Social Performance Scale (PSP) scores and functional remission rates (PSP>70 from week 13 [OL] and during DB phase for at least six months) were analyzed. No adjustment was made for multiplicity. **Results:** 532, 337 and 558 subjects diagnosed with schizophrenia ≤5, 6–10 and >10 years ago, respectively, entered the OL phase. Of these subjects, 379 (71.2%), 235 (69.7%) and 380 (68.1%) met clinical stabilization criteria and entered the DB phase. At OL baseline, mean PANSS scores for

the ≤5-, 6–10-, and >10-year groups were 84.7 (SD=10.0), 85.6 (SD=10.7) and 84.9 (SD=10.2); mean CGI-S scores were 4.4 (SD=0.7), 4.4 (SD=0.7) and 4.4 (SD=0.6); and mean PSP scores were 54.2 (SD=12.3), 53.4 (SD=12.5) and 52.9 (SD=11.9). Mean PANSS scores at DB baseline (OL endpoint) for the ≤5, 6–10 and >10 groups were 57.3 (SD=9.1), 56.5 (SD=9.1) and 59.1 (SD=5.3); mean CGI-S scores were 2.9 (SD=0.8), 2.9 (SD=0.7) and 3.0 (SD=0.6); and mean PSP scores were 66.7 (SD=9.9), 66.1 (SD=11.4) and 63.0 (SD=11.0). At DB endpoint, mean PANSS scores were 52.7 (SD=13.3), 51.2 (SD=13.3) and 56.6 (SD=15.2); mean CGI-S scores were 2.7 (SD=0.8), 2.7 (SD=0.9) and 3.0 (SD=0.9); and mean PSP scores were 68.3 (SD=12.1), 69.2 (SD=13.0) and 64.0 (SD=12.9). Significant differences were observed in the ≤5 and 6–10 groups compared to the >10 group from DB baseline to DB endpoint for PANSS, CGI-S and PSP total scores ($p<0.03$ for all). More patients achieved functional remission in the ≤5 (26.4%) and 6–10 (30.2%) groups compared to the >10 group (18.6%). The most common adverse events for each group were injection site reactions in the OL phase (9.0%,11.5% and 7.9%) and weight increase (28.8%, 19.2% and 14.7%) in the DB phase. **Conclusion:** Longer duration of illness (especially more than 10 years) was associated with decreased functional remission and worse outcomes despite continuous treatment with paliperidone palmitate LAI.

NO. 13

LURASIDONE ADJUNCTIVE TO LITHIUM OR VALPROATE FOR PREVENTION OF RECURRENCE IN PATIENTS WITH BIPOLAR I DISORDER: RESULTS OF A 28-WEEK STUDY

Lead Author: Joseph Calabrese, M.D.
Co-Author(s): Andrei Pikalov, M.D., Ph.D., Josephine Cucchiaro, Ph.D., Caroline Streicher, B.A., Jane Xu, Ph.D., Antony Loebel, M.D.

SUMMARY:
Background: Bipolar disorder is a chronic and highly recurrent illness. This study (NCT01358357) was designed to evaluate the relapse prevention efficacy and safety of adjunctive lurasidone for the maintenance treatment of bipolar disorder in patients with a stable response to acute treatment. **Methods:** This study consisted of an open-label stabilization phase (12–20 weeks), followed by randomization to a 28-week, double-blind, placebo-controlled phase. Patients randomized to lurasidone (20–80mg/d) or placebo were treated with adjunctive lithium or valproate during both phases. Patients who met *DSM-IV-TR* criteria for bipolar I disorder were enrolled if they had at least one manic, mixed manic or depressed episode in the past two years and a current YMRS or MADRS total score ≥14 (if on lithium or valproate) or ≥18 (if not on lithium or valproate). Patients were randomized to the 28-week double-blind phase if they achieved consistent clinical stability, defined as MADRS and YMRS total scores ≤12 for at least 12 weeks. Time to recurrence of any mood event (primary efficacy endpoint) was evaluated from double-blind baseline; recurrence was defined as meeting any of the following criteria: 1) *DSM-IV-TR* criteria for manic, mixed manic, hypomanic or depressive episode; 2) requires treatment for a mood episode; 3) requires hospitalization for a mood episode; 4) YMRS or MADRS total score ≥18 or CGI-BP-S score ≥4 at two consecutive assessments; or 5) discontinuation from the study because of a mood event. Cox proportional hazards model was used to assess time to recurrence of any mood disorder (primary outcome). Kaplan-Meier estimates of the probability of time to recurrence were also calculated. **Results:** A total of 496 patients met stabilization criteria and were randomized to adjunctive lurasidone (n=246, mean baseline MADRS/YMRS scores=40.0/2.2) versus. placebo (n=250, MADRS/YMRS=4.1/2.2). Patients in the lurasidone group had a longer time to recurrence of any mood event compared to patients in the placebo group, with a hazard ratio of 0.71 (95% CI [0.49, 1.04], p=0.078, a 29% reduction in recurrence risk). Kaplan-Meier estimates of the probability of time to recurrence of any mood event at 28 weeks were 20.9% for the adjunctive lurasidone group and 51.5% for the adjunctive placebo group (log-rank test, p=0.055). Time to recurrence of a depressive episode was significantly longer for lurasidone versus placebo, with a hazard ratio of 0.57 (95% CI [0.34, 0.97], p=0.039).**Conclusion:** In this double-blind study of patients with a bipolar I diagnosis who had been stabilized on lurasidone plus lithium or valproate, 28 weeks of continued treatment with adjunctive lurasidone was associated with a trend-significant risk reduction in time to recurrence of any mood event compared to placebo plus lithium or valproate and a significant reduction in time to recurrence of a depressive episode. This research was sponsored by Sunovion Pharmaceuticals Inc.

NO. 14

WITHDRAWN

<ParaStyle:PROG PAPER-SUMMARY>**Background:** Major depression occurs in one to three percent of the general elderly population, and an additional 8–16% have clinically significant depressive symptoms . Nonetheless, probably fewer than 20% of the cases are detected or treated. According to Erikson's developmental theory, the last stage of human life is characterized by ego integrity versus despair. If the person cannot accomplish his/her life goals, he/she becomes dissatisfied with life and develops despair, often leading to depression and hopelessness. In this study, we examined the relationship between depressive symptoms, hopelessness, death anxiety and acceptance of the past in a group of community-dwelling elderly Turkish adults. **Methods:** The study sample consisted of 99 community-dwelling people aged 50 and over. The study was conducted between June and October 2015. Participants were administered the Mini Mental Status Examination (MMSE), Geriatric Depression Scale (GDS), Beck Hopelessness Scale (BHS), Death Anxiety Scale (DAS) and Meaningful Past Questionnaire (MPQ). The study was approved by the ethics committee of Near East University, and informed consents were taken from all participants. All participants were administered the MMSE (mean=26.71±2.49), and the participants who scored fewer than 21 points were excluded. According to the GDS (mean=13.35±3.7, n=99), the sample was divided into two groups—depressed (GDS≥14) and nondepressed (GDS<14) subjects—and the two groups were compared in terms of MPQ, reminiscence subscale of the MPQ (MPQ Rem) and acceptance of the past subscale of the MPQ (MPQ AcPast); DAS; and BHS scores. Cronbach's alpha value of the MPQ was calculated for internal consistency (0.82). All statistical analyses were performed by SPSS v.16. **Results:** Depressed patients had lower education (t=2.93, p=0.004). There was no difference between the groups in terms of the age and MPQ Rem scores; all other scale scores were significantly different. The depressed group had higher BHS and DAS scores (respectively, t=−4.66, p<0.001; t=−2.89, p=0.005), while they had lower MPQ total scores (t=2.24, p=0.03), indicating lower past acceptance. **Conclusion:** This study revealed that Turkish older adults with depressive symptoms had high hopelessness and death anxiety and failed to accept the past.

NO. 15

DIFFERENT ATTACHMENT STYLE AND BEREAVEMENT RESPONSE IN PARENTS AFTER LOSING A CHILD DUE TO SEWOL FERRY ACCIDENT

Lead Author: Jeong-Ho Chae
Co-Author(s): Hyu Jung Huh, Seung Huh, Joo Ji Young

SUMMARY:

Background: Previous studies have confirmed that insecure attachment is one of the important risk factors of pathological grief. However, limited research has been performed about the impact of different attachment styles, such as anxious attachment and avoidant attachment, on bereavement response. This study examined the effect of avoidant and anxious attachment dimensions on depressive symptoms, complicated grief and alcohol use in the bereaved parents after the Sewol ferry accident. **Methods:** A total of 84 bereaved parents who lost a child due to Sewol ferry accident completed a questionnaire measuring sociodemographic characteristics; attachment style; and the severity of depressive symptoms, complicated grief and alcohol use problems. The Experience in Close Relationship Questionnaire-Short Form (ECR-S) was used to assess different attachment styles. The Patient Heath Questionnaire-9 (PHQ-9), Inventory of Complicated Grief (ICG) and Alcohol Use Disorder Test–Alcohol Consumption Questions (AUDIT-C) were used for evaluating the severity of bereavement response. Multiple regression analysis was performed to investigate the relationship of different attachment styles and bereavement response. **Results:** In the final regression model, anxious attachment style was associated with the severity of complicated grief and depressive symptoms after controlling for sociodemographic factors. In contrary, avoidant style was negatively associated with the severity of complicated grief. Alcohol use problems were positively associated with avoidant attachment style, not anxious attachment style. **Conclusion:** Anxious attachment style and avoidant attachment style may have different impacts on bereavement response. These findings provide evidence that an individualized approach according to different attachment styles would be considered to evaluate and take therapeutic intervention for bereavement response.

NO. 16

UNRESOLVED BEREAVEMENT AND OTHER MENTAL HEALTH PROBLEMS AMONG THE BEREAVED

PARENTS OF SEWOL FERRY ACCIDENT VICTIMS AFTER 18 MONTHS

Lead Author: Jeong-Ho Chae
Co-Author(s): Hyu Jung Huh, Seung Huh, Joo Ji Young

SUMMARY:

Background: Various types of disasters can adversely affect mental health, and numerous studies have proven that various traumatic experiences originating from disasters are related to significant psychological difficulties for a lot of people. Relatively few studies have investigated the effect of disaster-related death on the immediate families of victims. This study investigated the overall mental health consequence of the bereaved parents who lost their child due to Sewol ferry accident. **Methods:** Eighty-four bereaved parents participated in the study. Self-reported scales for assessing the severity of depression, post-traumatic stress symptoms, and complicated grief and other mental health problem were used at 18 months following the accident. Univariate descriptive statistics and multiple regression analysis were performed to report the prevalence, severity and correlates of psychiatric symptoms among bereaved parents. **Results:** Among 84 bereaved parents, 94% appeared to suffer from complicated grief based on the score of Inventory of Complicated Grief (ICG). Fifty percent of them were categorized into severe depression, and 70.2% reported clinically significant post-traumatic symptoms according to the score of Patient Health Questionnaire-9 (PHQ-9) and PTSD Checklist-5 (PCL-5). No significant difference by sex was observed in the severity of depression, post-traumatic symptoms and complicated grief. Higher educational level was associated with more severe psychiatric symptoms in fathers. Having religion was associated with milder depressive symptoms in mothers. **Conclusion:** The loss of a child due to a human-caused, large-scale disaster may have a substantial impact on parental mental health at 18 months after the disaster. Longitudinal studies following mental health state would be necessary in the future to investigate long-term effects of the traumatic experience.

NO. 17

MENTAL-PHYSICAL COMORBIDITY IN KOREAN ADULTS: RESULTS FROM A NATIONWIDE GENERAL POPULATION SURVEY IN KOREA

Lead Author: Sung Man Chang, M.D., Ph.D.
Co-Author(s): Tae Young Choi, Sung-Won Jung, Ji-Hyun Kim

SUMMARY:

Objective: This study estimated the prevalence of mental-physical comorbidity and health-threatening risk factors in subjects with mental disorders and evaluated the risks of mental disorders in those with physical diseases for the last 12 months in the general Korean population. **Methods:** Korean Epidemiologic Catchment Area study replication (KECA-R) was conducted for 6,510 adults between August 2006 and April 2007. The Korean version of the Composite International Diagnostic Interview 2.1 (K-CIDI) was used in the survey. Prevalence of mental and physical disorders and risk factors for physical health were calculated, and their associations were evaluated with adjustment for age and sex. **Results:** Subjects with any mental disorder showed a significantly higher prevalence of chronic physical conditions (adjusted odds ratio [AOR]=1.5 to 2.8, $p<0.001$) and medical risk factors including smoking, heavy drinking, obesity and hypertension (AOR=1.5 to 4.0, $p<0.001$). Of those with chronic physical conditions, 21.6% had one or more comorbid mental disorders, compared to 10.5% of subjects without chronic physical disorders (AOR=2.6, $p<0.001$). Contrary to expectations, depressive disorders did not show significant association with hypertension, and prevalence of obesity was not influenced by presence of mental disorders. Further studies should assess these findings. **Conclusion:** This is the first identification of significant mental-physical comorbidity in the general Korean population. Clinicians and health care officials should keep in mind its potential adverse effects on treatment outcome and aggravated disease-related socioeconomic burden.

NO. 18

WITHDRAWN

NO. 19

PILOT STUDY OF CARDIOVASCULAR RISKS AND INSULIN RESISTANCE IN NEUROLEPTICâ€INDUCED PARKINSONISM (NIP) IN SCHIZOPHRENIA: A POST HOC ANALYSIS OF RCT

Lead Author: Simon Chiu, M.D., Ph.D.
Co-Author(s): Hana Raheb, Kristen Terpstra, Zack Cernovsky, Yves Bureau, JerryJirui, John Copen, Mariwan Husni

SUMMARY:

Background: The core symptoms of sporadic Parkinson's disease (sPD) are bradykinesia, cogwheel

muscle rigidity and gait disturbances; however, spontaneous extrapyramidal motor signs were first described in 4–11% drugâ€naïve schizophrenia patients. Cumulative exposure to firstâ€generation (FGAs) and, to a lesser extent, second-generation antipsychotics (SGAs) is known to induce neuroleptic-induced Parkinsonism (NIP) and tardive dyskinesia in schizophrenia. There is mounting evidence to suggest that type II diabetes mellitus (T2DM) and cardiometabolic risk factors are linked to PD. There is a paucity of studies relating T2DM and cardiometabolic factors to NIP and neurocognitive deficits in schizophrenia. **Objective:** In a cohort of SGA-maintained schizophrenic patients, we examined if 1) NIP in schizophrenia is correlated with neurocognitive deficits as assessed with the standardized battery of neurocognitive tests;2) The severity of NIP is associated with the severity of cardiovascular risk scores; and 3) Insulin resistance modulates the link between NIP and neurocognitive impairment. **Methods:** Our pilot study of NIP in schizophrenia was derived as a secondary analysis of data from the original randomized controlled trial study of the augmentation effects of Panax Ginseng formulated as Ginsana-115 (Boehringer Ingelheim Pharmaton, Switzerland). The cohort of patients diagnosed with schizophrenia exhibiting persistent negative symptoms were maintained with SGA and received oral Ginsana-115 200 or 100mg over eight weeks. For secondary analysis, we used the baseline parameters of the Brief Psychiatric Rating Scale, Scale for Negative Symptoms, Positive and Negative Syndrome Scale, Computerized Neurocognitive Test, Simpson-Angus Scale (SAS), Abnormal Involuntary Movement Scale (AIMS), Treatment-Emergent Adverse Events Scale, HOMO-derived insulin resistance (IR) and Framingham Risk Composite Score (FRS). We calculated Pearson correlation coefficients of SAS and AIMS scores to neurocognitive measures, IR and FRS score. **Results:** We recruited 44 SGAâ€treated schizophrenic subjects (mean age=38, 29 male) with a mean baseline SAS score of 4.2 (SD=3.9): 52.3% (n=23) over 3 and 34.1% (n=15) over 6. Baseline SAS scores correlated significantly with logâ€IR (r=44, p=0.007) and FRS score (r=0.60, p<0.001) independent of body mass index. NIP severity was correlated directly with insulin resistance and cardiovascular risk. Higher SAS scores correlated significantly with impaired neuropsychological performance on a composite neurocognitive index (r>0.30, p<0.05) and selected cognitive domains of visual perception, executive reasoning, spatial processing, abstraction and flexibility, and psychomotor performance (r>0.30, p<0.05). AIMS scores correlated significantly with FRS scores (r=0.36, p=0.039) and memory (r=0.32, p=0.037). **Discussion:** In our cohort of schizophrenic patients, NIP is related to neurocognitive deficits, cardiovascular risk factors and insulin resistance.

NO. 20

GENETIC RISK FACTORS ASSOCIATED WITH COMMONLY PRESCRIBED PSYCHOTROPIC MEDICATIONS

Lead Author: Zia Choudhry, M.D., Ph.D., M.Sc.
Co-Author(s): Lorna Khensouvann, Kathryn Gardner, Michelle Martinez, Rachel Scott, Jay Lombard

SUMMARY:

Background: Approximately 10 million American adults suffer from a serious mental illness every year, including schizophrenia, bipolar disorder or major depressive disorder. Psychiatrists have treated patients using the traditional trial and error approach, but psychotropic medications are well known for associated adverse events that are prevalent and problematic. Many of these medications cause intolerability that may lead to low medication adherence and treatment resistance. Several studies have demonstrated that adverse events are related to clinically actionable genetic variations. Therefore, pharmacogenetics testing proves to be a valuable tool in identifying these variations, considering clinicians can use a patient's unique genetic information to develop a personalized therapeutic plan, rather than applying a one size fits all model. A personalized approach allows clinicians to avoid side effects, deduce correct dosing, and add certain medications to the regimen, which may yield better therapeutic outcomes for a patient. This study investigates the potential risk for gene-drug interactions for the top 25 most commonly prescribed psychotropic drugs. **Methods:** Genetic variation data was obtained from a database of 25,754 psychiatric patients who received the Genecept Assay™ (Genomind, Inc., King of Prussia, PA). The frequencies of clinically actionable variations in the genes SLC6A4, CACNA1C, ANK3, 5HT2C, DRD2, COMT, MTHFR, CYPs 2D6, 2C19 and 3A4/5 were calculated for this patient population. The frequencies were further evaluated in relation to the top 25 most commonly prescribed psychotropic medications in 2013 as reported by IMS Health. These psychotropic medications include

antidepressants, antipsychotics, anxiolytics and dopaminergic stimulants. **Results:** Frequency data for genetic variations in this patient population matches with the Caucasian population frequencies reported in dbSNP. Further, data show that the potential for a gene-drug interaction with these commonly prescribed psychotropic medications is highly probable. More specifically, out of 25,754 individuals in this data set, more than 99.7% had at least one clinically actionable variation in the 10 genes evaluated by the Genecept Assay. **Conclusion:** Data from these patients reflect a high risk for gene-drug interactions with commonly prescribed psychotropic medication. This data also adds to the growing evidence that pharmacogenetics testing is a useful tool in treating psychiatric patients. Further, providing clinicians with individual patients' genetic results can improve treatment outcomes by reducing the risk of adverse events, nonresponse and treatment resistance, while increasing medication adherence. If pharmacogenetic testing is implemented in clinical practice and becomes a gold standard, this may ultimately decrease health care expenses and increase the number of psychiatric patients who experience improved response and remission.

NO. 21

UNDERSTANDING DIFFERENCES IN EVALUATING INSIGHT INTO PSYCHOSIS BETWEEN CLINICIANS AND INDIVIDUALS WITH SCHIZOPHRENIA

Lead Author: In-Won Chung, M.D., Ph.D.
Co-Author(s): Jae Seung Chang, Hye Sung Kim, Young Wook Jeong, Hee-Yeon Jung, Yong Sik Kim

SUMMARY:

Background: Despite inconsistent findings on the clinical importance of insight into psychosis, insight has gained constant attention as a key dimension of psychopathology. This study investigated the differences in insight evaluation between clinicians and individuals with psychosis. **Methods:** To measure the dimensions of insight into psychosis, the VAGUS Self-Report (VAGUS-SR) and Clinician-Rated (VAGUS-CR) Korean versions were used to assess 41 patients with schizophrenia (20 females). Multivariate techniques were performed to reveal the differences in insight structure between clinicians and patients. **Results:** Both versions were correlated with one another ($r=0.73$, $p<0.001$) and with the Scale to Assess Unawareness of Mental Disorder (SUMD) and Schedule for the Assessment of Insight (SAI). On the other hand, significant gender effects were observed in the relationship between VAGUS-SR and -CR. Multivariate analyses revealed the link between "illness awareness" and "symptom attribution" in VAGUS-CR in contrast to the link between "illness awareness" and "need for treatment" in VAGUS-SR. **Discussion:** Our findings suggest that the differences in insight structure may partly contribute to the difficulties in communication between clinicians and patients, thereby negatively affecting treatment adherence and clinical outcome. The VAGUS-CR and -SR may be used complementarily to provide detailed information on insight into psychosis.

NO. 22

EFFICACY OF CARIPRAZINE IN NEGATIVE, COGNITIVE AND SOCIAL FUNCTION SYMPTOMS OF SCHIZOPHRENIA: POST-HOC ANALYSIS OF A RANDOMIZED CONTROLLED TRIAL

Lead Author: Andrew J. Cutler, M.D.
Co-Author(s): Suresh Durgam, M.D., Kaifeng Lu, Ph.D., István Laszlovszky, Ph.D., Pharm.D., Willie Earley, M.D.

SUMMARY:

Background: Antipsychotics are generally effective in treating the positive symptoms of schizophrenia, but negative symptoms and cognitive deficits are difficult to treat and may contribute to poor social functioning. Cariprazine is a potent dopamine D2/D3 receptor partial agonist with preferential binding to D3 receptors approved for the treatment of schizophrenia and has shown efficacy on a broad range of schizophrenia symptoms in clinical trials. This post hoc analysis of a phase 3 placebo- and active-controlled trial (NCT01104766) evaluates cariprazine on Positive and Negative Syndrome Scale (PANSS)-derived subscales related to negative symptoms, cognition and social functioning in patients with acute exacerbation of schizophrenia. **Methods:** A total of 604 patients were randomized to six weeks of double-blind treatment (placebo n=149, cariprazine 3mg/d n=151, cariprazine 6mg/d n=154, aripiprazole 10mg/d n=150). Efficacy was analyzed using change from baseline in PANSS negative subscale score and PANSS-derived cognitive (P2, N5, N7, G10, G11) and prosocial (P3, P6, N2, N4, N7, G16) factor scores. **Results:** The least squares mean difference (LSMD) was statistically significant in favor of cariprazine over placebo in PANSS negative (3mg/d=−1.4, 95% CI [−2.4, −0.4], p=0.0068; 6mg/d=−1.7, 95% CI [−2.7, −0.7], p=0.0009), cognitive (3mg/d=−1.2, 95% CI [−1.9, −0.5],

p=0.0005; 6mg/d=−1.2, 95% CI [−1.9, −0.6], p=0.0004) and prosocial (3mg/d=−1.4, 95% CI [−2.5, −0.4], p=0.0070; 6mg/d=−2.2, 95% CI [−3.2, −1.1], p<0.0001) scores. In PANSS negative score, significant improvement was seen for both cariprazine doses and placebo by week 1 (p<0.05). In PANSS cognitive score, significant improvement was seen by week 2 for cariprazine 6mg/d (p<0.05) and week 3 for 3mg/d (p<0.01). In PANSS prosocial score, significant improvement was seen by week 1 for cariprazine 6mg/d and week 3 for 3mg/d (p<0.05 for both). Early separation from placebo for both cariprazine doses on PANSS negative, cognitive and prosocial scores was maintained through week 6. LSMDs for aripiprazole versus placebo were statistically significant on PANSS negative (−1.2, 95% CI [−2.2, −0.2], p=0.0152), cognitive (−1.0, 95% CI [−1.6, −0.3], p=0.0047) and prosocial (−1.3, 95% CI [−2.4, −0.3], p=0.0099) scores. Significant improvement was seen by week 3 on PANSS cognitive scores (p<0.001) and by week 2 on negative (p<0.05) and prosocial (p<0.01) scores; significant differences were maintained through week 6. **Conclusion:** Cariprazine 3 and 6mg/d demonstrated significant and sustained efficacy versus placebo within one to three weeks of treatment initiation across PANSS negative, cognitive and prosocial domains. Results suggest that cariprazine may be beneficial in improving negative and cognitive symptoms as well as social functioning in patients with acute exacerbation of schizophrenia. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 23
WITHDRAWN

NO. 24
SMARTPHONE APPS AS THERAPY EXTENDERS IN ANXIETY, MOOD AND COGNITIVE DISORDERS: THE CONSUMER'S PERSPECTIVE
Lead Author: Dale D'Mello, M.D.

SUMMARY:
There is wide consensus that the combination of psychopharmacology and cognitive behavior therapy (CBT) is superior to either approach used alone in managing depressive, anxiety and psychotic disorders. Completing homework assignments is prerequisite for successful outcomes with CBT. Computer-assisted CBT can decrease automatic dysfunctional thoughts, and computer-assisted cognitive enhancement training is effective in patients with schizophrenia and others with mild cognitive impairment. The convergence of digital computer technology and consumer self-empowerment has driven the release of a bewildering array of mental health applications for smartphones and other mobile devices. **Objective:** Review some of the most popular smartphone apps available for the management of psychiatric disorders. **Methods:** A recent search was conducted of the stores on the iOS and Android platforms, seeking apps for mood, anxiety and cognitive disorders. Reviews of digital technology resources provided by the International Mental Health Research Organization (IMHRO) at www.psyberguide.org were consulted. Criteria for inclusion included 1) More than 10,000 downloads; 2) A score of 3.5 or higher on a consumer five-star rating scale; 3) Acquisition cost less than one dollar; 4) Performance tracking capability; and 5) Messaging capacity. Consumer reviews were scanned. **Results:** A total of 12 apps were culled from an expanding universe of thousands. This included the three top-rated apps in each of three symptom domains: depression, anxiety and cognitive disorders. Ranked in order of popularity (download volume), the leading depression apps were "Depression CBT Self-Help Guide," "eCBT Mood" and "CBT-i Coach." The most popular anxiety apps were "Stop Panic and Anxiety," "Mindshift" and "Self-Help Anxiety Management (SAM)." The top apps for cognitive enhancement training were "Lumosity," "Elevate Brain Training" and "Fit Brains Focus." Three additional recently introduced apps were included because of their lifesaving potential. "My3" is a suicide prevention app that enables the user to instantly communicate with family, friends and 911. "Step Away" is designed for managing alcohol use disorder, but can be modified for misuse of any substance. "NAMI Air," which is offered by the National Alliance on Mental Illness, provides information, social support and instant phone access to crisis services. Consumers rated the reviewed apps favorably. **Conclusion:** Homework assignments, such as relaxation training, cognitive restructuring and behavioral activation are commonly employed as therapy extenders in the management of patients with depression and anxiety. Smartphone apps are achieving wider acceptance in self-management of common psychiatric disorders. Clinicians may need to become familiar with the use of these adjunctive therapeutic tools. Strategies for integrating

smartphone apps in routine brief psychopharmacological visits will be reviewed.

NO. 25

SPIRITUALITY TRAINING IN THE MEDICAL CURRICULUM: A MEDICAL STUDENT PERSPECTIVE

Lead Author: Stacy J. Doumas, M.D.
Co-Author(s): Pooja Shah, M.D., Michael Ullo, B.S., David Cotton, David Kountz, M.D., Ramon Solhkhah, M.D., Joseph Miller, Ph.D.

SUMMARY:
Spirituality is an important element of humanity, encompassing an individual's search for meaning and purpose. The parallel between spirituality and health has been present for centuries, but it has only recently been recognized as an important component of medical care and student training. Incorporation of spirituality in the medical student's curriculum is almost a revolution when we think about restoring a balance between evidence-based and humanistic aspects of patient care. Initially started through a grant from GWish and the Templeton foundation in 2014, Reflection Rounds are now incorporated into the curriculum of approximately 50 third- and fourth-year allopathic and osteopathic medical students and physician assistant students doing core rotations in psychiatry at Jersey Shore University Medical Center (JSUMC). As part of the reflection rounds curriculum, education is provided to the students on the role of spirituality in health care and health outcomes, the role of pastoral care in patient care and how personal biases can impact patient care. Students are also taught how to take a spiritual history. Weekly reflection rounds start with a deep breathing ritual for relaxation. During the one-hour period, the students get an opportunity to discuss how they address the spiritual needs of patients and themselves with a psychiatrist and chaplain co-facilitating. At the end of the academic year, an anonymous, voluntary online survey is available to all participants, giving the students the opportunity to share their perspective on reflection rounds. Retrospective analysis has been performed using the survey data from the 2014–2015 academic year for the purpose of improving the quality of the medical student curriculum. There were 40 medical students who completed a six-week psychiatry rotation at JSUMC and participated in weekly reflection rounds for 90 minutes. Among them, 28 (56%) completed an online questionnaire aimed at identifying strengths and weaknesses of the sessions. Over 70% of participants viewed reflection rounds as a valuable part of the psychiatry curriculum at JSUMC. Sixteen (57.14%) participants indicated that the sessions enhanced their understanding of the role of spirituality in health and health care outcomes. Additionally, the majority of participants felt more comfortable referring patients to pastoral care services when needed. Students identified the length of the sessions as well as lack of well-defined objectives as potential weaknesses of reflection rounds. The curriculum has been adjusted to address these concerns. In conclusion, reflection rounds are a well-received part of the psychiatry curriculum at JSUMC, as they provide students with a safe environment to discuss the role of spirituality in medicine. Efforts are also being made to extend reflection rounds to other rotations and graduate medical education at JSUMC.

NO. 26

EARLY IMPROVEMENT IS A PREDICTOR OF RESPONSE AND REMISSION IN BIPOLAR I DISORDER: A POOLED ANALYSIS OF THREE RANDOMIZED CARIPRAZINE TRIALS

Lead Author: Suresh Durgam, M.D.
Co-Author(s): Joseph R. Calabrese, M.D., Willie Earley, M.D., Raffaele Migliore, M.A., Kaifeng Lu, Ph.D., István Laszlovszky, Ph.D., Pharm.D.

SUMMARY:
Background: Cariprazine, a dopamine D3/D2 receptor partial agonist with preferential binding to D3 receptors, is now FDA-approved for the treatment of manic or mixed episodes associated with bipolar I disorder (BD). Early identification of patients who will ultimately respond to treatment is critical for making efficient and effective therapeutic decisions. This study evaluated the clinical utility of using early improvement as a predictor of cariprazine treatment outcome in patients with BD. **Methods:** Post hoc analysis was performed on pooled data from three randomized, double-blind clinical trials (NCT00488618, NCT01058096, NCT01058668) of cariprazine (n=608; 3–12mg/day) versus placebo (n=429) in the treatment of BD. Early improvement, defined as 25% or greater reduction in Young Mania Rating Scale (YMRS) total score, was assessed at day 4 or 5 and on day 7. Response and remission at week 3 were defined as 50% or greater reduction in YMRS total score and a total score of 12 or less, respectively. Positive (PPV) and negative (NPV) predictive values were calculated to determine whether early improvement was

predictive of endpoint response or remission. **Results:** A higher percentage of cariprazine- than placebo-treated patients met criteria for early improvement on day 4/5 (41% vs. 29%) and day 7 (59% vs. 41%). Similarly, a higher percentage of cariprazine- than placebo-treated patients met week 3 criteria for response (57% vs. 36%) and remission (46% vs. 30%). Of 249 early improvers in the cariprazine group on day 4/5, 68% responded and 60% remitted at endpoint. Among patients who did not achieve early improvement, only 42% responded and 31% remitted. Similarly, of the 335 early improvers identified on day 7, 71% responded and 60% remitted at endpoint, while 35% and 24% of patients not meeting early improvement criteria responded and remitted, respectively. These data yielded PPVs for day 4/5 assessment of 68.3% for response and 59.8% for remission and for day 7 assessment of 71.0% for response and 60.3% for remission. NPVs for day 4/5 assessment were 58.2% for response and 69.4% for remission and for day 7 assessment were 65.5% for response and 76.2% for remission. **Conclusion:** Patients treated with cariprazine were more likely to show early improvement of symptoms than those treated with placebo. An improvement of 25% or more in YMRS score within one week of cariprazine initiation appeared to be a good predictor of endpoint response and remission. Conversely, patients not achieving sufficient improvement by the end of week 1 were less likely to achieve endpoint response or remission. These results suggest that early improvement in YMRS scores with cariprazine treatment may be a reliable predictor of treatment outcome in patients with BD. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 27

SAFETY AND EFFICACY OF CARIPRAZINE IN FDA-APPROVED DOSE RANGES FOR SCHIZOPHRENIA AND BIPOLAR I DISORDER: A POOLED POST HOC ANALYSIS

Lead Author: Willie Earley, M.D.

Co-Author(s): Suresh Durgam, M.D., Kaifeng Lu, Ph.D., György Németh, M.D., István Laszlovszky, Ph.D., Pharm.D.

SUMMARY:

Background: Cariprazine (CAR), a potent dopamine D3/D2 receptor partial agonist, is FDA-approved for the treatment of schizophrenia (SZ) and manic or mixed episodes associated with bipolar I disorder (BD). Efficacy and tolerability of CAR in SZ and BD were demonstrated in randomized, double-blind, placebo-controlled phase 2/3 clinical trials. A number of these studies utilized a flexible-dose design, and patients received doses outside of the approved dose range. This pooled post hoc analysis evaluated the safety and tolerability of CAR using modal daily doses within the FDA-approved 1.5–6.0mg/day dose range. **Methods:** Data were pooled for each indication separately. In SZ, four six-week trials were included (NCT00404573, NCT01104766, NCT01104779, NCT00694707); in BD, three three-week trials were included (NCT00488618, NCT01058096, NCT01058668). For safety analyses, patients were grouped into pooled dose groups based on modal daily dose (SZ: placebo [n=584], CAR 1.5–3mg/day [n=539] and CAR 4.5–6mg/day [n=575]; BD: placebo [n=442] and CAR 3–6mg/day [n=263]). Safety parameters included adverse events (AEs), clinical laboratory values, physical examination and extrapyramidal symptom scales. **Results:** CAR demonstrated significant improvement versus placebo in three of the four trials of patients with SZ (primary outcome: Positive and Negative Syndrome Scale [PANSS] total score, $p<0.01$, all studies) and in all three trials of patients with BD (primary outcome: Young Mania Rating Scale total score [YMRS], $p<0.001$, all studies). The rate of discontinuation due to AEs was 12% for placebo and 10% for CAR in SZ and seven percent for placebo and 11% for CAR in BD. The most commonly reported treatment-emergent AE (TEAE) (≥5% and twice placebo) in both indications was akathisia (SZ: placebo, 3.6%; 1.5–3mg/day, 9.1%; 4.5–6mg/day, 12.5%; BD: placebo, 4.8%; 3–6mg/day, 19.8%). Additional commonly reported TEAEs in either SZ or BD trials were extrapyramidal disorder (SZ, 1.5–3 and 4.5–6mg/day), tremor (SZ, 4.5–6mg/day), restlessness (BD, 3–6mg/day) and vomiting (BD, 3–6mg/day). The incidence of serious AEs was similar for CAR and placebo. Mean changes from baseline in body weight were small (≤1kg) for all dose groups in both indications. Mean changes in metabolic parameters were similar between treatment groups, with the exception of greater glucose and triglyceride increases in the BD studies (triglycerides: placebo, −4.4mg/dL; 3–6mg/day, +8.7mg/dL; glucose: placebo, 1.7mg/dL; 3–6 mg/day, 6.6mg/dL). Mean prolactin levels decreased from baseline in both the placebo and CAR groups in both patient populations. **Conclusion:** Based on this pooled analysis, cariprazine was generally safe, well tolerated and efficacious in the FDA-approved dose

ranges in patients with acute exacerbations of schizophrenia and bipolar mania. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 28

INJECTION SITE REACTIONS AND PAIN ASSOCIATED WITH LONG-ACTING INJECTABLE ANTIPSYCHOTICS PALIPERIDONE PALMITATE ONCE-MONTHLY AND ONCE-EVERY-THREE-MONTHS

Poster Presenter:Adam Savitz, M.D., Ph.D.
Lead Author: Erica Elefant, M.S.W., R.N.
Co-Author(s): Jennifer Kern Sliwa, Adam Savitz, Isaac Nuamah, Maju Mathews, Srihari Gopal, Dean Najarian, Larry Alphs

SUMMARY:

Background: Injection site reactions and pain associated with long-acting injectable antipsychotics are of interest to health care professionals. Safety data from a randomized, double-blind (DB), parallel-group, multicenter, noninferiority study (NCT01515423) evaluated injection site reactions and pain associated with paliperidone palmitate once-monthly (PP1M) and paliperidone palmitate once-every-three-months (PP3M). **Methods:** Subjects (n=1429) with schizophrenia were initially treated with PP1M (78mg, 117mg, 156mg or 234mg) in a 17-week open-label (OL) phase. Subjects received PP1M injections in the deltoid muscle on day 1 (234mg) and day 8 (156mg); a switch to the gluteal muscle was allowed beginning at OL week 5. Upon meeting clinical stabilization criteria, subjects were randomized 1:1 to fixed-dose injections of PP1M (78–234mg) or PP3M (273, 410, 546 or 819mg) in a 48-week DB phase. The PP3M group received a 3.5 multiple of the PP1M dose received at OL week 13; the PP1M group received the same dose at OL week 13. Investigators, blinded to treatment assignment, assessed injection site reactions (redness, induration and swelling) within 30 minutes of each injection using a four-point rating scale (0 [absent] to 3 [severe]). Subjects assessed pain using a visual analog scale (VAS; 0 [no pain] to 100 [maximum pain]). Injection site evaluation comparisons were conducted by study phase (OL vs. DB), final OL dose (78/117, 156 or 234mg), injection location (deltoid or gluteal muscle), baseline body mass index (BMI; <25, ≥25 to <30, ≥30 to <35 or ≥35kg/m^2) and region (Europe, Latin America, North America or Rest of World). VAS scores were analyzed using descriptive statistics. **Results:** Overall, injections were well tolerated with both PP3M and PP1M. Incidences of induration, redness and swelling were low (9–12%) in the OL and DB (7–13%) phases and were mostly mild in nature. Mean VAS scores were 22.0 (SD=21.6) at OL baseline and 19.0 (SD=20.6) at OL week 17. At DB baseline, VAS scores for PP3M and PP1M were 19.5 (SD=20.6) and 18.4 (SD=20.4), respectively; at DB endpoint, VAS scores were 15.6 (SD=17.9) and 15.5 (SD=18.3), respectively. No notable changes in injection site reactions or pain between the PP3M and PP1M groups were observed by injection site location or baseline BMI during the OL and DB phases or by final OL dose of PP1M during the DB phase. Subjects in the Rest of World group had slightly higher VAS scores at OL baseline (29.7 [SD=23.6]) than those in Europe (17.1 [SD=18.2]), Latin America (18.9 [SD=20.6]) and North America (18.6 [SD=21.2]). At DB endpoint, VAS scores were 21.2 (SD=18.9), 11.8 (SD=14.6), 16.1 (SD=19.7) and 16.0 (SD=23.9), respectively, for PP3M and 22.2 (SD=19.9), 11.2 (SD=14.7), 16.5 (SD=19.5) and 12.6 (SD=20.6), respectively, for PP1M. **Conclusion:** Injection site reactions and pain were low, mild and similar between PP1M and PP3M, regardless of last dose of OL PP1M, location of the injection or baseline BMI.

NO. 29

EFFECT OF ADJUNCTIVE BREXPIPRAZOLE ON WEIGHT AND METABOLIC PARAMETERS: AN ANALYSIS OF SHORT- AND LONG-TERM TRIALS IN MAJOR DEPRESSIVE DISORDER

Lead Author: Hans Eriksson
Co-Author(s): Catherine Weiss, Aleksandar Skuban, Peter Zhang, Emmanuelle Weiller

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/2C receptors. Brexpiprazole was approved in 2015 by the FDA for use as an adjunctive therapy to antidepressants (ADT) for the treatment of major depressive disorder (MDD) and schizophrenia. This study evaluates the effect of adjunctive brexpiprazole on weight and metabolic parameters in patients with MDD based on pooled data from two pivotal studies and pooled data from two long-term, open-label trials. **Methods:** In the two similarly designed pivotal studies, patients with MDD and inadequate response to one to three ADTs were enrolled and received single-blind ADT for eight weeks. Patients with inadequate response after this

prospective phase were randomized to ADT+brexpiprazole or ADT+placebo for six weeks. Both studies included fixed doses (1mg and 3mg; 2mg). The long-term studies were 26-week ([NCT01360866, ongoing, data cutoff May 2015] fixed-dose, 0.5, 1, 2 and 3mg/day) and 52-week ([NCT01447576] flexible-dose 0.5–3mg/day) studies with adjunctive brexpiprazole, enrolling de novo patients, patients who had completed one of the two pivotal studies or patients completing a phase 2 study. We report weight and fasting metabolic parameters including glucose and lipid metabolism-related laboratory measurements at week 6 of the placebo-controlled studies and at week 26 of the open-label studies. **Results:** In the short-term studies, mean change in weight from baseline to week 6 was 1.4 (n=215), 1.6 (n=174), 1.6 (n=210) and 0.3kg (n=383) for the 1, 2 and 3mg ADT+brexpiprazole and ADT+placebo groups, respectively. In the long-term studies, the mean change in weight from baseline to week 26 was 2.9kg (n=1259). For fasting metabolic parameters, mean changes from baseline to last visit in the short-term studies were 0.70, 2.60 and 1.49 vs. 0.06mg/dL (ADT+brexpiprazole 1, 2 and 3mg vs. ADT+placebo; total cholesterol); 1.12, 1.21 and 2.07 vs. 0.56mg/dL (high-density lipoprotein cholesterol [HDL]); −1.50, 1.37 and −0.77 vs. 1.18mg/dL (low-density lipoprotein cholesterol [LDL]); 3.21, −0.83 and 2.20 vs. −2.27mg/dL (triglycerides); and −0.75, −0.40 and 0.70 vs. 0.92mg/dL (glucose). Mean changes from baseline to week 26 in the long-term studies were 2.40mg/dL (total cholesterol), −2.31mg/dL (HDL), 3.57mg/dL (LDL), 14.92mg/dL (triglycerides) and 3.51mg/dL (glucose). **Conclusion:** A moderate weight increase was observed after adjunctive treatment with brexpiprazole with small changes in lipid profiles and other metabolic parameters.

NO. 30

DRUG-RELATED MORTALITY IN CAMDEN, NJ: DEMOGRAPHICS AND SUBSTANCE MISUSE TRENDS DURING THE 2010–2013 PERIOD

Lead Author: Kalvin Foo, B.Sc.
Co-Author(s): Karim Sedky, M.D., Andres J. Pumariega, M.D.

SUMMARY:

Background: Mortality from substance use has had a changing profile in recent history, with notable rising trends in particular regions of the country. With a reputation for poverty and crime, Camden, NJ, is a region that has struggled with substance use. As programs that help address this often operate at a regional level, regional trends are necessary in order to properly assist a particular population. As such, analysis of substance use-related death in this population will help us to better understand the demographic patterns of this at-risk population to better serve it. **Methods:** Mortality data was obtained from New Jersey's Department of Human and Health Services for 2010–2013 and the Centers for Disease Control and Prevention's Wide-Ranging Online Data for Epidemiologic Research (CDC WONDER) system. Subject demographic information, number of substances found at death and the substance types were investigated for trend analysis. **Results:** Across all years in this study, individuals were predominantly Caucasian (74.2%) and male (74.0%). Subjects ages 25–44 had the highest mortality rate of all groups. Opiate derivatives were the highest offending agent, occurring in 82.9% of deaths in Camden County, followed by stimulants in 42.1% and benzodiazepine-related compounds in 39.5%. Furthermore, 23.1% of victims were found to have three or more substances at death. While trending for opiate presence in drug mortalities has not significantly increased or decreased in this time period, it is still grossly higher than crude rate of drug-induced deaths at the New Jersey state level. **Conclusion:** This study highlights the opiate epidemic as a major offending agent in Camden. Victims were predominantly Caucasian, and a notable population of them had multiple substances detected at time of death. It is imperative to focus on drug use services for this population, especially those geared toward opiate misuse.

NO. 31

DEXTROMETHORPHAN/QUINIDINE IMPROVED SYMPTOMS OF PSEUDOBULBAR AFFECT IRRESPECTIVE OF CONCOMITANT ANTIDEPRESSANT USE

Lead Author: Andrea Formella, Pharm.D.
Co-Author(s): David Alexander, Andrew Cutler, Stephen D'Amico, Flora Hammond, William Sauve, Richard Zorowitz, JoÃ£o Siffert

SUMMARY:

Background: Pseudobulbar affect (PBA) can occur secondary to certain neurological diseases or brain injury. It is characterized by frequent, uncontrollable laughing/crying episodes that can be exaggerated or incongruent to mood or social context. PBA may be mistaken for, or occur comorbidly with, depression,

and many patients receive antidepressant therapy. Dextromethorphan/quinidine (DM/Q) is currently the only approved PBA treatment (U.S. and EU). This exploratory analysis evaluated outcomes from a DM/Q effectiveness trial for PBA stratified by antidepressant use at baseline (BL). **Methods:** PRISM II was an open-label trial enrolling persons with a clinical diagnosis of PBA secondary to dementia, stroke or traumatic brain injury (TBI) and a Center for Neurologic Study Lability Scale (CNS-LS) score ≥13. All participants received DM/Q 20/10mg bid for 90 days. Patients taking antidepressants were allowed to enroll provided doses were stable (two months). Outcome measures included the CNS-LS score (primary), PBA episode count, PBA episode quality of life impact (QoL-Visual Analog Scale), and Patient Health Questionnaire (PHQ-9) and Mini-Mental State Examination (MMSE) scores. Comparisons of least squares mean (LSM) change from BL to day 90 for antidepressant users versus nonusers were analyzed for each cohort (TBI, dementia and stroke) with a two-sample t-test using an ANCOVA model with BL score as covariates. Safety data were analyzed descriptively. **Results:** A total of 367 patients enrolled, including 120, 113 and 134 with TBI, stroke and dementia, respectively. Of these, 48.5% (42.5%, 45.1% and 56.7%, respectively) were using antidepressants. At day 90/endpoint, significant improvement was observed for all outcome measures compared to BL, regardless of antidepressant use. Reductions in CNS-LS score were similar for antidepressant users versus nonusers (LSM change=−8.2 vs. −7.2, p=0.08) and were similar within disease cohorts (TBI: −8.8 vs. −8.2, p=0.56; stroke: −8.5 vs. −6.9, p=0.16; dementia: −7.6 vs. −6.7, p=0.36). Likewise, there were no significant differences in other outcome measures by antidepressant use, with the exception of MMSE score in the stroke cohort (improvement of 0.6 for antidepressant users versus 1.6 for nonusers, p=0.02]. The overall incidence of adverse events (AEs) was 37.6% for antidepressant users and 34.4% for nonusers. AEs occurring in at least two percent of patients were diarrhea (4.9% [2.8% antidepressant users vs. 6.9% nonusers]), headache (3.0% [4.5% vs. 1.6%]), dizziness (2.2% [4.5% vs. 2.6%]) and UTI (2.2% [1.7% vs. 2.6%]). Serious AEs were reported in 6.3% (5.6% vs. 6.9%), and 9.8% (7.9% vs. 11.6%) discontinued for AEs. **Conclusion:** In this analysis, DM/Q was associated with PBA symptom improvement and reduced depressive symptoms regardless of concomitant antidepressant use at BL. These findings were observed across a range of disease subgroups associated with PBA.

NO. 32

SCHIZOPHRENIA DISEASE COURSE TRAJECTORY AND EARLY ILLNESS INTERVENTION: A REVIEW OF THE LITERATURE AND THE DREAM STUDY DESIGN

Lead Author: Dong-Jing Fu, M.D., Ph.D.
Co-Author(s): Brianne Brown, Larry Alphs

SUMMARY:

Background: The disease course trajectory of schizophrenia (SCZ) is characterized by recurrent relapses and persistent cognitive deficits that contribute to clinical and functional deterioration over time. Recent evidence shows that various neurobiological abnormalities occur during the course of SCZ, including loss of gray matter and decreased white matter integrity (especially intracortical myelination [ICM] dysregulation and deficits). These changes do not appear to be inevitable. Several studies suggest that early initiation of psychological, pharmaceutical and nutritional interventions can delay—if not prevent—these abnormalities. Therefore, providing adequate treatment for SCZ within the first years following symptom onset represents a critical period in the pathophysiology of the disease. A growing body of evidence suggests that when SCZ patients are provided continuous effective antipsychotic exposure early in their illness, relapse and rehospitalization rates are decreased and white matter volume is maintained. We provide an overview of the current knowledge related to early intervention in SCZ and describe the study design of DREaM, a prospective, matched-control, randomized, open-label (OL), flexible-dose study of subjects with recent-onset schizophrenia or schizophreniform disorder that will compare disease progression and disease modification following treatment with paliperidone palmitate once-monthly, followed by three-month long-acting injectable (LAI) or oral antipsychotics (OAs). **Methods:** DREaM includes three treatment phases: a two-month OL OA run-in (part 1), a nine-month disease progression (part 2) and a nine-month extended disease progression/modification (part 3). After completing OA treatment run-in, patients are randomly assigned (1:2) to LAI or OAs. After nine months, the OA group is further randomly assigned (1:1) to LAI or continued on flexible-dose OAs. Changes in cognition, patient functioning and volume of brain ICM are all assessed as measures of

disease progression (parts 2 and 3) and modification (part 3). Overall primary endpoint to compare the effectiveness of LAIs versus OAs is time to first treatment failure. **Results:** Approximately 250 subjects will be randomly assigned to this study. Analysis will require distinct approaches to each of the major endpoints related to symptoms, functioning and biological changes for establishing evidence of disease progression and modification. **Conclusion:** Identifying optimal early-intervention strategies is a key component to improving outcomes in SCZ patients with early illness. Results from DREaM will identify important insights in disease progression and potential disease modification in recent-onset schizophrenia. The study will evaluate whether LAI treatment can slow disease progression and possibly modify disease course compared to OAs by tracking changes in cognition, functioning and brain imaging.

NO. 33

EFFICACY OF ASENAPINE IN PEDIATRIC PATIENTS WITH MANIC AND MIXED EPISODES OF BIPOLAR I DISORDER

Lead Author: Chris Gache, M.D.
Co-Author(s): Robert Findling, M.D., Roger S. McIntyre, M.D., Trisha Suppes, M.D., Ph.D., Ronald Landbloom, M.D., Seung-Ho Han, Ph.D., Suresh Durgam, M.D.

SUMMARY:

Background: Asenapine (ASN) is an atypical antipsychotic currently approved for pediatric patients aged 10 to 17 as monotherapy for the acute treatment of manic or mixed episodes associated with bipolar I disorder (BPD). **Objective:** This post hoc analysis of the key primary (Young-Mania Rating Scale [YMRS]) and secondary (Clinical Global Impression Scale for use in Bipolar Illness [CGI-BP]) efficacy endpoints compared the effect of three ASN doses versus placebo (PBO) in pediatric patients with BPD currently experiencing a manic episode against those experiencing a mixed episode. **Methods:** This was a three-week, randomized, double-blind, PBO-controlled, parallel-group trial of ASN in pediatric patients aged 10 to 17 with an acute manic or mixed episodes associated with BPD (NCT01244815). Patients were randomized 1:1:1:1 to PBO or ASN 2.5mg twice daily (bid), 5mg bid or 10mg bid. All patients who received at least 1 dose of the study drug and had both baseline and at least one post-baseline in-treatment YMRS or CGI-BP total score measurement were included in this analysis. Changes in the least-squares (LS) mean YMRS and CGI-BP total scores from baseline to day 21, as well as differences between the LS mean change between the ASN and PBO groups, were analyzed using a mixed model for repeated measures. **Results:** Antipsychotic therapy led to significant between-group (ASN vs. PBO) differences in LS mean YMRS total score change from baseline to day 21 in patients with mixed current episodes who received ASN 2.5mg (n=52, difference in LS means (Î”LS)=−5.5, 95% CI [−8.46, −2.62], p=0.0002), ASN 5mg (n=50, Î”LS=−6.9, 95% CI [−9.87, −4.02], p<0.0001) and ASN 10mg (n=46, Î”LS=−7.1, 95% CI [−10.10, −4.18, p<0.0001) compared to patients who received PBO (n=44). By contrast, significant between-group differences in LS mean YMRS total score change from baseline to day 21 were observed only in patients with mania who received ASN 10mg (n=35, Î”LS=−4.1, 95% CI [−8.19, −0.01], p=0.0495) compared to PBO (n=35). Significant between-group (ASN vs. PBO) differences in LS mean CGI-BP total score change from baseline to day 21 were observed in patients with mixed current episodes who received ASN 2.5mg (n=52, Î”LS=−0.7, 95% CI [−1.10, −0.35], p=0.0002), ASN 5mg (n=50, Î”LS=−0.8, 95% CI [−1.17, −0.42], p<0.0001) and ASN 10mg (n=46, −0.8, 95% CI [−1.15, −0.39], p<0.0001) compared to PBO (n=44), whereas significant differences where observed only in patients with mania who received ASN 5mg (n=37, Î”LS=−0.5, 95% CI [−1.01, −0.09], p=0.0195) and ASN 10mg (n=35, Î”LS=−0.5, 95% CI [−1.00, −0.07], p=0.0232) compared to PBO (n=35). **Conclusion:** ASN demonstrated a statistically significant improvement versus PBO in both YMRS and CGI-BP total scores at all doses in pediatric patients with BPD experiencing a mixed episode, whereas a statistically significant improvement was only observed at higher doses of ASN in those experiencing mania.

NO. 34

BASELINE DIFFERENCES IN TWO DEPRESSED POPULATIONS: MAJOR DEPRESSION WITH MIXED FEATURES VERSUS BIPOLAR I DEPRESSION

Poster Presenter:Yongcai Mao, Ph.D.
Lead Author: Keming Gao, M.D., Ph.D.
Co-Author(s): Joseph Calabrese, M.D., Andrei Pikalov, M.D., Ph.D., Joyce Tsai, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: The *DSM-5* introduced a mixed-features specifier to permit clinicians to identify patients with major depressive disorder (MDD) who

present with three or more manic symptoms occurring nearly every day during an episode. This MDD subtype appears to be common and may be associated with reduced treatment response to standard antidepressants and an increased risk for the development of bipolar disorder. This post hoc analysis compared baseline characteristics for two samples of convenience comprised of patients entering two clinical trials (NCT01421134; NCT00868699): an MDD-mixed group and a bipolar I depression (BD) group. **Methods:** In the MDD-mixed study, patients were recruited if they met *DSM-IV-TR* criteria for MDD with no history of bipolar disorder and if they currently presented with two or three protocol-specified manic symptoms. In the second study, patients were recruited if they met *DSM-IV-TR* criteria for BD. The MDD-mixed study required a Montgomery-Åsberg Depression Rating Scale (MADRS) total score ≥26, and the BD study required a MADRS score ≥20; however, for this analysis, the subgroups with a baseline MADRS total score ≥26 were analyzed (83.5% of total). In addition, the BD study limited entry to patients with a Young Mania Rating Scale (YMRS) total score ≤12. **Results:** Baseline characteristics of the MDD-mixed (n=209) versus BD (n=405) populations were male (30.6% vs. 42.2%), mean age (44.9 vs. 41.9 years), mean MADRS/YMRS total scores (33.3/10.7 vs. 31.8/4.4) and mean duration of current episode (24.4 vs. 11.7 weeks). At baseline, the mean MADRS item scores for the MDD-mixed versus. BD populations were apparent sadness (4.0 vs. 3.8), reported sadness (4.4 vs. 4.1), inner tension (3.3 vs. 2.9), reduced sleep (4.2 vs. 3.7), reduced appetite (3.0 vs. 2.7), concentration difficulties (3.9 vs. 3.6), lassitude (3.6 vs. 3.7), inability to feel (3.8 vs. 3.6), pessimistic thoughts (2.5 vs. 2.8) and suicidal thoughts (0.5 vs. 0.9). The mean YMRS item scores for the MDD-mixed versus. BD populations were elevated mood (0.4 vs. 0.05), increased activity/energy (1.0 vs. 0.11), sexual interest (0.2 vs. 0.04), sleep (2.0 vs. 1.5), irritability (1.9 vs. 1.5), rate/amount of speech (2.1 vs. 0.07), language/thought disorder (1.3 vs. 0.3), content (0.4 vs. 0.07), disruptive-aggressive behavior (0.7 vs. 0.4), appearance (0.5 vs. 0.4) and insight (0.2 vs. 0.5). **Conclusion:** In this baseline comparison of MDD-mixed and BD patient groups, severity of illness appeared to be higher in the MDD-mixed group in terms of depressive symptoms, manic symptoms and duration of current episode. These data suggest that major depressive disorder with mixed features may be a distinct clinical population that can be distinguished from bipolar depression based on careful diagnostic assessment. This research was sponsored by Sunovion Pharmaceuticals, Inc.

NO. 35

EFFICACY AND SAFETY OF ADJUNCTIVE BITOPERTIN VERSUS PLACEBO IN OBSESSIVE-COMPULSIVE DISORDER: RESULTS FROM THE PHASE II SKYLYTE STUDY

Lead Author: Ayana Gibbs, M.D., Ph.D.
Co-Author(s): Shuguang Sun, Ph.D., Lorrin M. Koran, M.D., Magdalena Pirozek-Lawniczek, M.D., Julie Napieralski, Ph.D., Tania Ochi Lohmann, Ph.D., Janice Smith, Ph.D., Wayne Goodman, M.D., Paulo Fontoura, M.D., Ph.D., George Garibaldi, M.D.

SUMMARY:
Background: A third of patients with obsessive-compulsive disorder (OCD) do not respond sufficiently to first-line treatments such as cognitive behavior therapy or selective serotonin reuptake inhibitors (SSRIs). Converging lines of evidence suggest that NMDA receptor dysfunction contributes to the pathophysiology of OCD. Bitopertin is an investigational glycine reuptake inhibitor that we hypothesized would enhance NMDA receptor function in OCD patients and bring about clinical improvement. **Methods:** In a randomized, double-blind, placebo-controlled study, patients with OCD and an insufficient response to ongoing SSRI treatment were randomized 1:1:1 to receive bitopertin 10mg, 30mg or placebo once daily in addition to their SSRI therapy. In order to minimize bias that may contribute to post-randomization placebo effect, patients were additionally randomized to one of two strata: stratum 1 started the double-blind study drug on day 1, whereas patients in stratum 2 received placebo during a two-week placebo lead-in period starting on day 1 and then started the double-blind study drug at the end of week 2. The primary endpoint was change from baseline in Y-BOCS total score after 12 weeks of treatment. **Results:** Of the 100 patients randomized, 91 were included in the intention to treat (ITT) population and were approximately equally distributed across the treatment groups. Demographic and disease characteristics at randomization were comparable across groups, with the exception of a greater proportion of women in the placebo group (63.6%) compared to the 30mg bitopertin group (38.7%). Over 78% of patients in each group completed randomized treatment. Y-BOCS total score improved in all three treatment

groups. However, there was significantly greater improvement in the placebo group (−9.99) than in the 10mg bitopertin group (−4.95, p=0.0062) and the 30 mg bitopertin group (−5.23, p=0.0106) after 12 weeks. Results for secondary efficacy endpoints were consistent with the primary endpoint, and results for strata 1 and 2 were similar to those of the overall ITT population. During the active treatment period, the proportion of patients experiencing one or more adverse events (AE) was 45.5% in the placebo and 10mg bitopertin groups and 61.3% in the 30mg bitopertin group. Two AEs in the 30mg bitopertin group and one AE in the placebo group led to discontinuation during the active treatment period. As expected, there was a dose-dependent decrease in hemoglobin. **Conclusion:** Bitopertin was well tolerated in combination with SSRIs but was not effective for the adjunctive treatment of OCD. Patients who received bitopertin experienced significantly less improvement than patients who received placebo. As the improvement observed in patients who received placebo is substantially larger than in previous studies of OCD, it is difficult to evaluate the benefits of the variable placebo lead-in. However, it did not appear to minimize the placebo effect in this study.

NO. 36

TREATMENT RESISTANT DEPRESSION (TRD): SOCIODEMOGRAPHIC PROFILES AND PHARMACOLOGICAL OUTCOMES

Poster Presenter:Maykel F. Ghabrash, M.D., M.Sc.
Lead Author: Gabriella Gobbi, M.D., Ph.D.
Co-Author(s): Nicolas NuÃ±ez, M.D., M.Sc., John Tabaka, M.Sc., Marie Saint-Laurent, M.D., Stephen Vida, M.D., Eugenia Zikos, M.D., Theodore Kolivakis, M.D., Nancy Low, M.D., M.Sc., Pablo Cervantes, M.D., Linda Booij, Ph.D., Gabriella Gobbi, M.D., Ph.D.

SUMMARY:
Background: Major depressive disorder (MDD) is a highly prevalent and potentially disabling or fatal disease. According to the STAR*D project, about 50% of patients with unipolar depression suffer from treatment-resistant depression (TRD). **Methods:** We evaluated sociodemographic features and treatment outcomes in 78 patients (46 female, 32 male) with TRD from the register of the Mood Disorder Clinic at McGill University Health Center (MUHC). Clinical response was investigated prior to treatment (T-0) and after 30–90 days (T-3) of stable therapy using the Montgomery-Åsberg Depression Rating Scale (MADRS), Hamilton Rating Scale for Depression (HAM-D17), Quick Inventory of Depressive Symptomatology (QIDS-C16) and Clinical Global Impression–Severity of Illness (CGI-S). All patients failed to respond to at least two or more antidepressant trials and/or combinations, and several patients had multiple additional trials before identifying the best combinations. Only the last trial, when the patient responded and became stable for over 30 days, was included in this study. **Results:** Patients responded to three pharmacological interventions: 1) Antidepressant combination (n=21); 2) Mood stabilizers and antidepressants (n=16); 3) Atypical antipsychotics and antidepressants (n=41). Compared to T-0, patients in all treatment groups showed a significant decrease in depressive symptoms on all scales at T-3 (p<0.001). Importantly, at T-0, group 3 showed higher depressive symptoms on all scales as compared to group 1 (HAM-D17, 25.7±1 vs. 21.3±1.5, mean±S.E.M, p=0.02). In addition, group 3, compared to group 1, showed more previous suicide attempts (29.3% vs. 14.3%) and a higher number of failed treatments (4.2±2.9 vs. 2.7±2, mean±SD). Finally, change from T-0 to T-3 (Î”) on HAM-D17 was significantly superior in group 3 (Î”=10.6) compared to group 1 (Î”=7, P=0.05). **Conclusion:** These results suggest the importance of antipsychotic augmentation as a first-line treatment in patients with severe TRD. The use of antipsychotic augmentation deserves further exploration in large double-blinded clinical trials in patients with a severe TRD profile.

NO. 37

PRE- AND INTRA-MEDICAL SCHOOL FACTORS ASSOCIATED WITH PSYCHIATRY SPECIALTY CHOICE: AAMC DATA ANALYSIS

Lead Author: Matthew N. Goldenberg, M.D., M.Sc.
Co-Author(s): John J. Spollen, M.D., D. Keith Williams, Ph.D.

SUMMARY:
Background: Psychiatry is a shortage specialty, and recruitment of U.S. medical students into the field remains a challenge. Only about four percent of U.S. medical school graduates enter psychiatric residencies, and U.S. graduates fill only about two-thirds of offered residency positions in the specialty. **Objective:** Determine what pre-medical school and medical school factors are associated with a student's career choice of psychiatry compared to other medical specialties. **Methods:** We used linked demographic information, matriculation (MSQ) and

graduation (GQ) survey data from AAMC surveys of 29,714 students who graduated medical school in 2013 and 2014 and completed at least one of the surveys. The authors identified 29 collected variables that were hypothesized to be associated with psychiatry specialty choice. A logistic model was employed to estimate the multivariate adjusted level of association of the 29 factors with a student's choice of psychiatry versus all other fields. **Results:** A student's rating of the psychiatric clerkship as excellent was the factor most associated with psychiatry specialty choice (OR=2.72). Other highly associated factors include undergraduate psychology major (OR=2.56), reporting work-life balance as a strong influence on specialty choice (OR=2.30), reporting educational debt as having no influence on specialty choice (OR=1.58), age older than 27 at matriculation (OR=1.40) and significant positive pre-medical school exposure to people of different sexual preference (OR=1.28). All of these factors were significant at p<0.0001. **Conclusion:** Students who ultimately choose psychiatry differ from their nonpsychiatrist peers in various demographic, matriculation/pre-medical school and intra-medical school characteristics and experiences. These results may be of particular interest to policymakers, medical school admissions committees and psychiatric faculty and may help target future pre- and intra-medical school recruitment efforts into psychiatry.

NO. 38

CAREGIVER BURDEN IN SCHIZOPHRENIA: POOLED ANALYSIS OF THE INVOLVEMENT EVALUATION QUESTIONNAIRE DATA FOR PALIPERIDONE PALMITATE THREE-MONTH FORMULATION

Lead Author: Srihari Gopal, M.D., M.H.S.
Co-Author(s): Haiyan Xu, Kelly McQuarrie, Adam Savitz, Isaac Nuamah, Kimberly Woodruff, Maju Mathews

SUMMARY:

Objective: At the conclusion of the session, the participant should be able to: 1) Recognize the caregiver burden in patients with schizophrenia; 2) Recognize the extent of improvements in caregiver burden in patients treated for schizophrenia; and 3) Identify the benefits of reducing caregiver burden within schizophrenia and psychiatric clinics in order to both reduce psychiatric symptom severity and better coordinate mental health care. **Background:** Schizophrenia-related caregiver burden is often underrecognized and associated with significant psychological and physical stress and increased indirect costs to the caregiver. The pooled analysis of two double-blind, randomized, multicenter, phase 3 studies (NCT01529515 and NCT01515423) evaluated the predictors of improvement or worsening of schizophrenia-related caregiver burden following paliperidone palmitate (including one-month [PPM-1] and three-month [PPM-3] formulations) treatment. **Methods:** Caregivers (family members/friends who had one hour or more of contact per week with the patients treated with PPM-1) were invited to complete the Involvement Evaluation Questionnaire (IEQ; 46 items; each item score: 0–4; total score: sum of all items in module 2 [0–124]). **Results:** A total of 1,497 caregivers (mean age=51.5 years [SD=13.02]) were included: 49.3% were parents and more than 50% of caregivers spent more than 32 hours/week in caregiving. Caregivers had significant improvement in IEQ sum scores from baseline to end of study (n=756; mean baseline score=28.3 points [SD=15.34]; mean improvement=8.9 points [SD=14.73]), with most improvements seen in worrying (2.6 points) and urging (3.7 points) domains. There was a significant relationship between improvement in IEQ sum scores and relapse status (p<0.001) and patient age (p<0.05); age of diagnosis, long-acting injectable (LAI) use at baseline, and number and duration of prior psychiatric hospitalizations (less than 24 months) had no significant effect on improvement. Caregiver burden improvement was significant in patients on prior oral antipsychotics after switching to LAI with fewer leisure days being impacted and fewer hours spent in caregiving (p<0.001). **Conclusion:** Caregiver burden in family members of patients treated for schizophrenia is considerable. Switching from an oral antipsychotic to an LAI can provide a meaningful and significant improvement in caregiver burden.

NO. 39

MEDICATION USE AMONG COMMERCIALLY-INSURED ADULTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD) IN THE U.S.

Poster Presenter:Zhou Zhou, M.S.
Lead Author: Regina Grebla, Ph.D., M.P.H.
Co-Author(s): Zheng-Yi Zhou, Sneha S. Kelkar, Shang Li, Jipan Xie

SUMMARY:

Objective: Although attention-deficit/hyperactivity disorder (ADHD) is increasingly recognized as a

lifespan disorder, little is known about real-world pharmacological treatment among adults with ADHD. We therefore examined patterns of prescription medication for the treatment of ADHD among commercially-insured adults with ADHD in the U.S. **Methods:** Adults who were 18 or older in 2013 with a confirmed ADHD diagnosis on at least two consecutive provider visits and who received at least one ADHD medication were identified from the Truven Marketscan claims database. The first ADHD treatment episode of at least 30 days in 2013 was defined as the index treatment. Combination therapy, defined as concomitant use of two or more ADHD medications for at least 30 days, was identified by an overlap of at least 30 days between the index treatment and one or more different ADHD treatment(s). Based on this definition and the formulations of treatments, patients were classified into one of the six mutually exclusive treatment groups: long-acting (LA) monotherapy, short-acting (SA) monotherapy, LA+LA combination, SA+SA combination, LA+SA combination and combination of more than two therapies. Characteristics of patients in each treatment group, including sociodemographics, comorbid physical and mental health conditions, and types of medications were analyzed. **Results:** We studied 206,443 adults with ADHD who received at least one treatment in 2013, with a mean age of 32.9 (SD=12.9) and among whom, 51.6% were female. Of these adults, 117,409 (56.9%) used LA monotherapy and 63,301 (30.7%) used SA monotherapy. Another 12.5% combined different ADHD medications: 21,316 (10.3%) used LA+SA, 2,639 (1.3%) used LA+LA, 786 (0.4%) used SA+SA and 992 (0.5%) used more than two therapies. The most common LA monotherapies were dextroamphetamine and amphetamine mixed salts (D-AMPH/AMPH, 39.2%), lisdexamfetamine (LDX, 31.5%) and methylphenidate (MPH, 19.9%). The most common SA monotherapies were D-AMPH/AMPH (81.7%) and MPH (14.5%). The top three combination therapies in the LA+LA group were branded and generic D-AMPH/AMPH (13.7%), LDX and generic D-AMPH/AMPH (10.8%), and LDX and guanfacine ER (10.7%). The top three combination therapies in the SA+SA group were generic D-AMPH/AMPH and clonidine IR (33.5%), generic D-AMPH/AMPH and generic MPH (17.9%), and branded and generic D-AMPH/AMPH (11.1%). In the LA+SA group, the most common combination therapy was LA and SA generic D-AMPH/AMPH (39.2%), followed by LDX and generic D-AMPH/AMPH (16.7%) and LA and SA generic MPH (12.6%). **Conclusion:** During 2013, the majority of adults with ADHD in a commercially insured U.S. population were treated with an LA stimulant. Furthermore, some adults received a combination therapy with an LA agent, suggesting that currently marketed ADHD medications do not meet the needs of some patients. Future studies should examine unmet treatment needs among adults with ADHD.

NO. 40

POST-TRAUMATIC STRESS IN PRIMARY CARE

Lead Author: Raz Gross, M.D., M.P.H.
Co-Author(s): Talya Greene, Ph.D., Michele R. Spoont, Ph.D., Yuval Neria, Ph.D.

SUMMARY:

Previous research suggests that post-traumatic stress disorder (PTSD) is associated with comorbid health conditions, poor functioning and increased health care utilization. This presentation combines results from two studies: A review of the empirical literature on PTSD in primary care settings, focusing on prevalence, detection and correlates of PTSD and a systematic review the utility of case-finding instruments for PTSD among primary care and high-risk populations. We obtained relevant studies by means of 1) Electronic search using MEDLINE and PsycINFO (1980–December 2014) databases and a secondary search through the bibliographies and citations of the studies returned from the electronic search and 2) Electronic search using MEDLINE and the National Center for PTSD's Published International Literature on Traumatic Stress (PILOTS) databases for articles published on screening instruments for PTSD. Study quality was rated using Quality Assessment of Diagnostic Accuracy Studies (QUADAS) criteria. Current PTSD prevalence in primary care patients ranged widely between 2–39%, with significant heterogeneity in estimates explained by samples with different levels of trauma exposure. Six studies found that detection of PTSD by primary care physicians ranged from 0–52%. Studies examining associations between PTSD and sociodemographic variables yielded equivocal results. High comorbidity was reported between PTSD and other psychiatric disorders, including depression and anxiety, and PTSD was associated with functional impairment or disability. Exposure to multiple types of trauma also raised the risk of PTSD. Some studies indicated that primary care patients with PTSD report higher levels of substance and alcohol abuse, somatic symptoms, pain, health complaints, and health care utilization. Two screens,

the PC-PTSD and the PTSD Checklist (PCL) were the best performing instruments. The four-item PC-PTSD has a positive likelihood ratio of 7.1 (95% CI [5.5, 9.2]) and a negative likelihood ratio of 0.28 (95% CI [0.21, 0.37]) using the same score to indicate a positive screen as used by the Department of Veterans Affairs in all of its primary care clinics. The 17-item PCL has a positive likelihood ratio of 9.0 (95% CI [6.2, 13]) and a negative likelihood ratio of 0.38 (95% CI [0.30, 0.38]) using scores of around 40 to indicate a positive screen. Primary care clinics are important locations for detection of PTSD. The finding that PCPs were not successful at detecting PTSD suggests that there should be a more active and consistent screening process in primary care. Administering brief and sensitive screening tools, such as the PC-PTSD or the PCL to trauma-exposed patients, and to patients with other psychiatric diagnoses, is likely to identify individuals with undiagnosed PTSD. Raising PCPs' awareness of common correlates of PTSD, such as comorbid mental health problems, somatic complaints and functional impairment, may also improve detection.

NO. 41

OCULAR BIOMARKER FOR DIAGNOSIS OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Lead Author: Doug Hyun Han, M.D., Ph.D.
Co-Author(s): Jae Young Ahn, M.D., Joo Hyung Youh, M.D., Sujin Bae, Ph.D., Young Sik Lee, M.D., Ph.D., Baik Seok Kee, M.D., Ph.D.

SUMMARY:

Background: Biomarkers for attention-deficit/hyperactivity disorder (ADHD) are crucial for early diagnosis and intervention. Although many neuroimaging studies have suggested various brain abnormalities in ADHD children, there still has been no simple biomarker to represent ADHD. In embryological aspect, retina and brain cortex are both derived from the neural tube of the ectoderm. Therefore, we expected to identify the relationship between brain cortex and retina in ADHD patients. The purpose of this study was to find biomarkers for ADHD in the retina and assess the relationship between clinical diagnosis, retinal thickness and cortical thickness in ADHD children. **Methods:** Twelve children with ADHD and 13 control children have been recruited for this study. Cortical thickness in all children was assessed with a 3T MRI scanner and analyzed with FreeSurfer 5.3 software. Retina thickness in both eyes was measured by Cirrus OCT Model 4000 in all children. **Results:** The ADHD group showed an increased ratio of right frontal to parietal cortex, compared to the healthy comparison group. The ADHD children had thinner retinas in the means of the inner Early Treatment Diabetic Retinopathy Study (ETDRS) ring and the outer ETDRS ring, bilaterally. The central subfield of bilateral eyes showed no differences between the two groups. There were positive correlations between the mean of the inner ETDRS ring (right eye) and left paracentral/right isthmus cingulate thickness in the control group. However, there were negative correlations between the mean of the inner ETDRS ring (right eye) and left frontal pole thickness/right pars triangularis thickness in ADHD group. **Conclusion:** This is the first investigation to examine the relationship between brain abnormality and retinal thickness in ADHD. ADHD children showed more enlarged retinal thickness than healthy control children. Our results provide a clue that retinal thickness in children might be a biomarker for the detection of brain asymmetry in ADHD youth. The concept of retinal measurement as a new marker of brain abnormality shed light on the diagnosis of ADHD.

NO. 42

WITHDRAWN

NO. 43

ADRENERGIC POSTPRANDIAL SYNDROME AND HYPOTENSION IN ANXIETY AND AFFECTIVE SPECTRUM DISORDERS—A DIET: A THERAPEUTIC APPROACH IN AN OUTPATIENT SAMPLE

Lead Author: Cristian Y. Herrera, M.D., Ph.D.
Co-Author(s): Juan Ybarra, M.D., Ph.D., Helio Herrera

SUMMARY:

Background: As part of a previous pilot study, a small sample of patients presenting hypotension as a common feature with a variety of anxiety and affective disorders, fibromyalgia (FM), and chronic fatigue syndrome (CFS), either supplements of phenylalanine and/or a salt-, fluids- and protein-rich diet were in most cases enough to increase and normalize their BP. Later, as part of their clinical follow-up, we found that several of them complained of confusion, poor attention, irritability, sometimes headache, shakiness, weakness, hunger and labile mood for a few hours after meals, which improved after eating or drinking carbohydrates. As we could not measure stat blood sugar and we had several normal fasting glycemia patients we considered that reactive hypoglycemia (RH), the

usual differential diagnosis of adrenergic postprandial syndrome (APS), was an unlikely possibility, according to many authors, who mention the great difficulties to objectively asses RH. Therefore, taking into account the fact that treatment is usually alike (frequent small meals or snacks of non-simple sugars) and that APS at least theoretically seems more related to this group of patients that frequently shows a diversity of stress reactions and an overall tendency to catecholamine dysfunctions, we decided to use APS as a reference of neurovegetative dysregulation. **Methods:** We recruited 10 out of the 15 hypotension patients, who had complained of the above mentioned symptoms (at least of five of them). We kept the rest of their treatments, including the salty, protein-rich breakfast (for hypotension), and we added a five- to seven-meals-per-day diet that advised slow liberation carbohydrate cookies as snacks, allowing each patient to increase from a minimum of five to a maximum of seven or more if needed according to their symptoms, stress, premenstrual affective disorder, etc. **Results:** One patient refused to follow the diet because of her ongoing eating disorder. Two patients were inconsistent with the "slow sugar snacks," but experienced some improvement in their APS symptoms. Seven patients experienced both a great change and almost no APS as they learned how to avoid it by having lighter meals (less insulin overload). **Conclusion:** Regarding these very comorbid patients that we described in a poster at the 2014 APA Annual Meeting, even though they may improve their major symptoms according to their disorders, there seems to be a variety of mild (quasi normal) to moderate disturbances or disorders that add up to a rather unpleasant Quality of Life. We have been positively surprised by the rather simple method to correct APS (slow carbohydrates diet) after having improved their hypotension, which increased their experience of "weaknesses," both psychopathological and physical, also with a diet change (salty, protein-rich breakfasts and fluids). As usual in chronic ailments, poor compliance is an enemy to recession. However, many (7–10) adhere to the required regimen.

NO. 44

LACK OF PHARMACOKINETIC OR PHARMACODYNAMIC INTERACTION BETWEEN ENCENICLINE AND ETHANOL

Lead Author: Dana Hilt, M.D.

Co-Author(s): Beatrice Setnik, Ph.D., Hans J. Moebius, M.D., Ph.D., Nancy Dgetluck, M.S., Nathan Buerstatte, M.P.H., Vincent H. C. Lam, M.D., Nienke Loose, M.S., Hiren Mehta, Ph.D., Gordon Loewen, Ph.D.

SUMMARY:

Background: Encenicline is an orthosteric α7 nicotinic acetylcholine receptor agonist in development for treatment of cognitive impairment in schizophrenia and Alzheimer's disease. Due to the potential for ethanol (EtOH) ingestion during encenicline treatment, this study assessed the potential for pharmacokinetic (PK) or pharmacodynamic (PD) interactions between encenicline and EtOH. **Methods:** Solutions of encenicline 13.5mg (free base equivalent) or placebo (PBO) were administered with EtOH (0.6g/kg [female] or 0.7g/kg [male]) or PBO to 15 male and 13 female moderate drinkers during a single-dose, partial-blind, four-way crossover study. EtOH doses were administered four hours after encenicline/PBO doses to enable peak plasma concentrations (C_{max}) of encenicline and EtOH to be achieved at the same time. Subjects were required to demonstrate tolerability of EtOH doses prior to enrollment. Blood samples for determination of plasma encenicline and EtOH concentrations were obtained before and up to 72 hours after encenicline/PBO dose. PD endpoints, including visual analog scales (VAS), balance platform and cognitive/psychomotor tests (choice reaction test [CRT], divided attention test [DAT], digit symbol substitution test [DSST] and Sternberg short-term memory test [SSTM]) were assessed before and up to 24 hours after encenicline/PBO dose. Treatment-emergent adverse events (TEAEs) and vital signs were collected throughout the study. PK parameters (C_{max} and area under the plasma concentration curve [AUC]) for EtOH, encenicline and encenicline metabolites were determined using non-compartmental methods. PK and PD parameters were compared across study treatments using mixed-effect statistical models. **Results:** Ratios of C_{max} and AUC parameters for encenicline and metabolites with or without EtOH were within eight percent of unity, indicating EtOH did not affect encenicline PK. EtOH PK parameters confirmed that subjects were administered intoxicating EtOH doses (peak concentrationsâ‰ˆ20 mmol/L) and were similar with or without encenicline (ratios of C_{max} and AUC parameters with or without encenicline within three percent of unity). EtOH with or without encenicline was associated with expected detrimental changes in subjective (VAS) and objective (CRT, DAT, DSST,

SSTM) PD endpoints. Encenicline co-administration was not associated with increased impairment compared to EtOH alone. The most common TEAEs were consistent with EtOH intoxication (e.g., feeling drunk, headache). Encenicline plus EtOH did not have a detrimental effect on the safety profile compared to EtOH alone. **Conclusion:** The subjective and cognitive/psychomotor effects of encenicline plus EtOH were similar to the effects of EtOH alone, indicating that encenicline plus EtOH does not result in greater impairment than EtOH alone. In addition, no clinically relevant PK interaction or alteration of the safety profile was observed with co-administration of encenicline and EtOH.

NO. 45
WITHDRAWN

NO. 46
MATERNAL LIFESTYLE WITHIN 24 HOURS BEFORE DELIVERY MAY BE LINKED TO THE AUTISM EPIDEMIC

Lead Author: Silvia Hoirisch-Clapauch, M.D.
Co-Author(s): Maria Amelia Sayeg Porto, M.D., Ph.D., Antonio E. Nardi, M.D., Ph.D.

SUMMARY:
Background: Neonatal hypoglycemia, depriving neurons of their main energy source, is a risk factor for autism. Neonatal glucose levels are inversely correlated with umbilical cord levels of C-peptide, a polypeptide secreted along with insulin. In other words, neonatal hypoglycemia results from insulin hypersecretion from neonatal beta cells. Since insulin causes fat to be stored, not broken down, it is expected that chronic hyperinsulinemia will result in neonates large for gestational age. The finding that many small-for-gestational-age neonates have hypoglycemia suggests the stimulus for insulin production occurs close to delivery. We postulated that a potent stimulation of maternal insulin production close to delivery would also provide a potent stimulus for fetal and neonatal insulin production, causing neonatal hypoglycemia. This study investigated if indicators of overstimulation of maternal insulin production help to predict neonatal hypoglycemia. **Methods:** The study included 155 expectant mothers with one or more of the following indicators of supraphysiological stimulation of insulin production: 1) Acanthosis; 2) Morbid obesity; 3) Any invasive bacterial infection within a week before delivery; 4) Systemic corticosteroid use within a week before delivery; 5) Physical inactivity within 24 hours prior to delivery, defined as less than 40 minutes of housework, walking, or any other moderate or intense physical activity; or 6) High carbohydrate intake within 24 hours before delivery, including non-fasting mothers who consumed a high-glycemic index diet (snacks, candies, fiber-free juices, sugar-sweetened carbonated beverages) and mothers who required more than 50g of glucose or equivalent to treat iatrogenic hypoglycemia. Glucose level in neonates (n=158) was measured one, two and four hours after birth. The minimum value was correlated to the maternal indicators and also to classical predictors of neonatal hypoglycemia, such as low birth weight, preterm delivery and maternal diabetes. Significant predictors were entered into a logistic regression model to determine independent predictors of neonatal hypoglycemia, defined as a blood glucose less than 40mg/dL at one, two or four hours after birth. **Results:** The only independent predictors were inactivity and high carbohydrate intake. The risk of neonatal hypoglycemia increased fivefold with inactivity (95% CI [2, 11], $p<0.001$), 11-fold with high carbohydrate intake (95% CI [4, 24], $p<0.001$) and 329-fold with both risk factors (95% CI [32, 3362], $p<0.001$). Screening based on the two maternal risk factors detected all hypoglycemic neonates identified by current screening protocols, plus five appropriate-for-gestational-age-term neonates born to slim, non-diabetic mothers. **Conclusion:** Maternal lifestyle close to delivery may have a tremendous impact on neonatal glucose levels. Future studies may help determine if physical activity and a balanced diet close to delivery can stop the autism epidemic.

NO. 47
NEW-ONSET ANXIETY SYMPTOMS ASSOCIATED WITH USE OF OXANDROLONE BODYBUILDING SUPPLEMENT

Lead Author: Mark N. Hreish, M.D.
Co-Author(s): Norma R. Dunn, M.D., Ronnie G. Swift, M.D.

SUMMARY:
Background: Oxandrolone, popularly known as Anavar, is a frequently used anabolic steroid among bodybuilders and athletes. It is a synthetic anabolic steroid derivative of dihydrotestosterone and is a schedule III controlled substance because of its potential for abuse. Anabolic steroid use has been linked to psychiatric symptoms including anxiety, psychosis, mood lability and personality changes.

Case: We present the case of a 22-year-old female who presented in a psychiatric emergency room(ER) with the chief complaint of “having panic attacks." She described intense fear, difficulty breathing, palpitations, and feeling nauseous and faint, lasting intermittently for a few minutes. She had no prior psychiatric diagnosis and denied substance or alcohol abuse. She denied any medical conditions. Her history revealed use of an unknown dose of oxandrolone injection daily for two months. While in the psychiatric ER, she reported that she received a single dose of hydroxyzine 50mg orally, which provided some relief of her anxiety symptoms. She was discharged for follow-up to the mental health clinic. Her routine laboratory results were within normal limits, including a negative urine toxicology screen and a normal thyroid stimulating hormone level. Paroxetine 10mg PO daily was started. After a month on Paroxetine, the patient reported a significant decrease in her anxiety symptoms. **Discussion:** In our case report, it appears that there is a temporal relationship between the onset of the patient’s anxiety symptoms and use of the oxandrolone bodybuilding supplement. Our case report highlights the importance of screening for bodybuilding supplement use in patients who present with anxiety symptoms.

NO. 48

LURASIDONE IN BIPOLAR DEPRESSION: ACUTE STABLE RESPONSE AS A PREDICTOR OF LONG-TERM TREATMENT RESPONSE

Lead Author: Dan V. Iosifescu, M.D., M.Sc.
Co-Author(s): Joyce Tsai, Ph.D., Andrei Pikalov, M.D., Ph.D., Antony Loebel, M.D.

SUMMARY:

Objective: This post hoc analysis [NCT00868452] evaluated the predictive value of acute response to lurasidone on long-term response at six months in patients with bipolar I depression. **Methods:** This observed cases (OC) analysis was performed on patients with bipolar I depression who completed six weeks of double-blind, placebo-controlled treatment with lurasidone (fixed-flexible doses of 20–60mg/day and 80–120mg/day; dosages combined), followed by six months of open-label treatment with lurasidone in flexible doses of 20–120mg/day. Response was defined as 50% or higher reduction in the Montgomery Åsberg Depression Rating Scale (MADRS) total score, acute stable response was defined as two consecutive weeks of meeting response criteria and partial response was defined as 25% or more but less than 50% reduction in MADRS total score. The value of stable response during acute treatment for predicting long-term response at six months was evaluated in terms of sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and area under the receiver operative characteristic (ROC) curve (AUC). **Results:** During six months of open-label treatment with lurasidone, responder rates were 79.7% at month 3 and 90.3% at month 6 (OC). Acute stable response (for any two consecutive weeks of acute treatment) predicted response at month 3 with sensitivity=65.2%, specificity=69.4%, PPV=89.3%, NPV=33.8% and AUC=0.71 and predicted response at month 6 with sensitivity=61.2%, specificity=80.0%, PPV=96.6%, NPV=18.2% and AUC=0.78. Among non-responders, partial responders and responders at six weeks, the proportion of responders at the end of six months of open-label treatment with lurasidone was 84%, 79% and 96%, respectively. As noted above, NPV rates were relatively low (i.e., false negative rates were high), with a relatively high proportion of patients going on to achieve clinical response at months 3–6 despite the absence of acute stable response. For example, 77% of patients with only a partial response at week 6 (25% to 50% reduction in MADRS total score) achieved a full response at month 3 and 79% at month 6. **Conclusion:** Based on the AUC, the predictive value of acute stable response was fair to moderate. Most patients who responded after six months of treatment had demonstrated clinically meaningful improvement by the end of initial acute treatment. However, the absence of week 6 improvement was not found to be a reliable predictor of non-response during three to six months of continued treatment with lurasidone. This research was sponsored by Sunovion Pharmaceuticals Inc.

NO. 49

IMPROVEMENT IN PSYCHOSOCIAL FUNCTIONING PREDICTS LONG-TERM SYMPTOMATIC REMISSION: FINDINGS FROM CO-MED TRIAL

Lead Author: Manish K. Jha, M.B.B.S.
Co-Author(s): Abu Minhajuddin, Ph.D., Tracy Greer, Ph.D., Thomas Carmody, Ph.D., Madhukar Trivedi, M.D.

SUMMARY:

Background: Utility of psychosocial functioning as measurement-based care (MBC) assessment can be demonstrated if they are shown to reflect improvement beyond depression symptom change

and to predict long-term symptomatic remission. **Methods:** We divided all participants (n=665) of the Combining Medications to Enhance Depression Outcomes (CO-MED) trial in a training sample (n=334) and a validation sample (n=331) to confirm the findings from the training sample. We used linear mixed models to evaluate if changes in Work and Social Adjustment Scale (WSAS), a measure of psychosocial functioning, during the first six weeks of treatment continued to be significant even after adjusting for select baseline variables and depression severity at each visit in both samples. We then used modeled longitudinal groups of change in WSAS in the training sample during the first six weeks of treatment using data-driven trajectories. We then used the model estimates of selected models from the training sample to predict longitudinal groups in the validation sample. We evaluated the association of longitudinal groups with symptomatic remission at weeks 12 and 28 with stepwise logistic regression and backward elimination of nonsignificant baseline variables and remission status at week 6. **Results:** Participants experienced significant improvements in psychosocial functioning ($f=8.15$, $df=685$, $p<0.0001$, effect size =0.49 in the training sample and $f=6.75$, $df=686$, $p=0.0002$, effect size=0.42 in the validation sample) during the first six weeks of treatment, even after adjusting for select baseline variables and controlling for depression severity. In the training sample, participants in the marked early improvement (MEI) longitudinal group had significantly higher rates of remission at week 12 (OR=5.61, 95% CI [2.72, 11.57]) and week 28 (OR=3.04, 95% CI [1.60, 5.79]) as compared to those in the gradual slight change (GSC) longitudinal group, even after adjusting for baseline clinical and sociodemographic variables and remission at week 6. In the validation sample, the predicted MEI longitudinal group continued to have significantly higher rates of remission at week 12 (OR=3.25, 95% CI [1.65, 6.52]) and week 28 (OR=2.31, 95% CI [1.37, 3.90]) as compared to the predicted GSC longitudinal group. **Conclusion:** Psychosocial functioning improvements reflect improvements beyond depression symptom change. Rapid improvement of psychosocial functioning is associated with a higher likelihood of long-term symptomatic remission.

NO. 50

SCREENING FOR DEPRESSION AT A COLOCATED BEHAVIORAL HEALTH STUDENT-FACULTY COLLABORATIVE CLINIC

Lead Author: Meissa M. Jones, M.S.
Co-Author(s): Marya J. Cohen, M.D., M.P.H.

SUMMARY:

Background: According to the Anxiety and Depression Association of America, depression affects 14.8 million American adults in a given year. Many depressed patients seek care from their primary care physician (PCP), which has increased the need for effective screening tools for primary care settings. Research has shown that collocated behavioral health primary care clinics improve access to care, reduce wait times for referrals and improve overall health outcomes. The Crimson Care Collaborative (CCC), a network of six student-faculty clinics, was created in the hopes of increasing primary care interest among Harvard Medical School students. Massachusetts General Hospital (MGH) has a community health center that provides multispecialty services to predominantly underserved and refugee/immigrant populations in Chelsea, MA. CCC-Chelsea is the first and only collocated behavioral health student-faculty clinic in the U.S. In accordance with hospital guidelines, CCC-Chelsea uses the Patient Health Questionnaire-2 (PHQ-2) as a screening tool for depression, and patients are to be screened annually. To evaluate the incorporation of interdisciplinary services, we designed a project that would examine the behavioral health referral process for patients seen at the clinic. **Methods:** A retrospective chart review of all CCC-Chelsea patients who presented to our clinic between January and March 2015 was conducted. **Results:** Of the 56 patients seen at CCC-Chelsea from January through March 2015, 52 patients (92.8%) had received PHQ-2 screenings within the last year. During the time frame, five patients had a positive screening. Four patients received behavior health referrals from their PCP, and one patient declined a referral. Out of the four patients who were referred to behavioral health, two patients met with a mental health provider during their clinical visit, and follow-up appointments were scheduled during the consultation. The average wait time for a follow-up appointment was 4.5 weeks. In addition, those who screened positive on the PHQ-2 identified various social service needs such as cash, food, heating and housing assistance. **Discussion:** Bridging the gap between mental health and primary care by using shared office space has led to reduced health care costs, increased health care access and an improvement in health outcomes. Because the

clinical process of care at CCC-Chelsea includes a "warm hand-off," mental health appointments are scheduled during the PCP visit, allowing for an easier and more effective process. Future efforts will include using CCC-Chelsea's data for internal benchmarking within the MGH system as well as external benchmarking.

NO. 51

UNDIAGNOSED MEDULLOBLASTOMA PRESENTING WITH PSYCHIATRIC SYMPTOMS: A CASE REPORT

Lead Author: Divya E. Jose, M.D.
Co-Author(s): Geoffrey Peckover, M.D., Norma Dunn, M.D., Ronnie Swift, M.D.

SUMMARY:

Background: Brain tumors may present with various psychiatric symptoms, including depression, personality changes, psychosis and anorexia. Presenting symptoms may be elusive, making comprehensive history taking and assessment of utmost importance. Psychiatric symptoms may occur with any type of brain tumor and are seldom the only presentation. Brain tumors can be detected in patients with established psychiatric diagnosis. Medulloblastoma accounts for less than one percent of central nervous system tumors. **Case:** We present the case of a 21-year-old female with the diagnosis of psychosis not otherwise specified a year prior to being diagnosed with medulloblastoma. This was her first psychotic break, when she presented with disorganized thinking, preoccupied about Kundalini yoga, withdrawn and anxious with odd posturing for approximately two months. She was subsequently admitted to the psychiatric unit and stabilized with aripiprazole 10mg PO daily. She also reported history of a bicycle accident a year ago. Her computerized tomography (CT) of the brain was unremarkable. She did not keep follow-up appointments after discharge. On this recent hospital visit leading to the diagnosis of medulloblastoma, she presented with severe anxiety, nausea, vomiting and dizziness. CT of the brain was ordered; findings showed a 4.3x2.8 cm mass in the posterior fossa, new dilatation of the lateral and third ventricle and evidence of compression of the fourth ventricle with new hydrocephalus. Routine laboratory findings were within normal limits. She was transferred to the medical intensive care unit for transport to a specialty hospital. Brain magnetic resonance imaging (MRI) was consistent with the brain CT scan findings. She underwent suboccipital craniotomy and resection of posterior fossa tumor. Histopathology of the mass revealed medulloblastoma WHO grade IV. She continued treatment with a multidisciplinary team including neurosurgery, oncology and rehabilitation medicine. **Discussion:** Our case report highlights the importance of comprehensive assessment and neuroimaging studies in patients with psychiatric manifestations and neurological, metabolic symptoms like nausea and vomiting. She was referred to our psychiatric emergency room for severe anxiety; however, she had persistent nausea and vomiting and developed dizziness, which prompted the order for neuroimaging studies.

NO. 52

SYNTHETIC MARIJUANA-INDUCED RHABDOMYOLYSIS: A CASE REPORT

Lead Author: Divya E. Jose, M.D.
Co-Author(s): Norma Dunn, M.D., Ronnie Swift, M.D.

SUMMARY:

Background: Synthetic cannabinoids are known by several street names, including K2, Spice, Green Giant, Geeked Up, Caution, Smacked, Wicked X, AK-47 and "legal marijuana." There has been an exponential increase in emergency department visits related to synthetic cannabinoids since they was first reported in the United States in 2008. The ingredients change frequently, and as such, the risks and consequences of using them are unpredictable. Documented reactions include seizures, paranoia, hallucinations, severe anxiety, tremors, vomiting, numbness and tingling, high blood pressure, and tachycardia. **Case:** A 34-year-old male with a known history of schizophrenia and multiple hospitalizations for paranoid, disorganized behavior presented with generalized weakness and backache after inhaling synthetic cannabinoids for the first time. He appeared restless and paranoid and stated that he was "scared" and was "running away from home." He also endorsed visual hallucinations. Physical exam was unremarkable except for dry mucous membranes and lower extremity tenderness. Urine toxicology was positive for opiates. Laboratory results on presentation were remarkable for creatine kinase (CK) 167,780IU/L, aspartate transaminase (AST) and alanine transaminase (ALT) 2,006U/L and 358U/L, creatinine 2.1mg/dL, White blood cell (WBC) count of 15.53K/UL, and potassium 7.0mEq/L. He was transferred to the medical intensive care unit for medical management of severe rhabdomyolysis, acute kidney injury and hyperkalemia. He was treated with aggressive intravenous (IV) fluid

hydration and Kayexalate. The next day, CK increased to 230,220 and AST/ALT increased to 2,941/615, while creatinine decreased to 1.8 and potassium normalized to 4.0. He continued to receive IV fluid hydration, resulting in a downward trend of laboratory values. CK decreased to 77,360 on day four, 10,084 on day seven, 3,734 on day 24 and 727 on day 40. AST/ALT also steadily decreased, reaching 33/35 on day 24, while creatinine and WBC normalized to 1.2 and 7.02, respectively, on day four. He gradually improved with full resolution of physical symptoms following physical rehabilitation. He later stated, “I would never do that again." **Discussion:** Synthetic cannabinoids act as full agonists on cannabinoid receptors and are undetectable in routine laboratory screenings. Additives are frequently used to change the molecular structure of the drug, resulting in an unknown potency and making its effects even more unpredictable. Synthetic marijuana users cannot know how it would affect them or what they are getting. In fact, synthetic marijuana may even vary within the same brand. As such, efforts to increase awareness are of paramount importance in managing adverse reactions including rhabdomyolysis.

NO. 53

TREATMENT PATTERNS IN MEDICAID PATIENTS WITH SCHIZOPHRENIA INITIATING FIRST- OR SECOND-GENERATION LONG-ACTING INJECTABLE VERSUS ORAL ANTIPSYCHOTICS

Lead Author: Kruti Joshi, M.P.H.
Co-Author(s): Neeta Tandon, Dominic Pilon, Rhiannon Kamstra, Bruno Emond, Patrick Lefebvre

SUMMARY:

Background: Poor adherence to antipsychotic therapy is a key issue in patients with schizophrenia. Long-acting injectable therapies (LAI) may improve treatment adherence compared to oral antipsychotics (OAP). Data evaluating the effect that first-generation (FG-LAI) and second-generation (SG-LAI) LAIs may have on antipsychotic treatment patterns are limited. **Objective:** Compare treatment adherence and persistence in Medicaid patients diagnosed with schizophrenia initiated on FG-LAI or SG-LAI versus OAP. **Methods:** Medicaid data from FL, IA, KS, MS, MO and NJ from January 2009 to March 2015 were used to identify adults with schizophrenia initiated on FG-LAI, SG-LAI or OAP (index date) in or after January 2010. Baseline characteristics and outcomes were assessed during the 12 months before and after the index date, respectively. Index medication adherence and persistence were assessed using the proportion of patients with a proportion of days covered (PDC) of 80% or more and the proportion with no continuous gap of 60 or more days between days of supply, respectively. Outcomes were compared between FG-/SG-LAI and OAP cohorts using chi-square tests and odds ratios (OR) from multivariate logistic regression models adjusted for baseline characteristics. **Results:** At baseline, OAP patients (n=20,478) were more likely to be female (49% vs. 40%, p<0.001) and had more unique mental health diagnoses (mean: 9.3 vs. 8.1, p<0.001) compared to LAI patients (FG-LAI: n=1,089; SG-LAI: n=2,209). LAI patients were more likely to have antipsychotic polypharmacy (AP) (≥60 days with ≥2 AP) at baseline compared to OAP patients (19% vs. 14%, p<0.001). However, during follow-up, AP was more common in FG-LAI patients (36% vs. 33%, p=0.029) and was less common in SG-LAI patients (27% vs. 33%, p<0.001) relative to OAP patients. Compared to OAP patients, SG-LAI patients were more adherent at 12 months (PDC≥80%: 27% vs. 25%, p=0.008), while FG-LAI patients were less adherent (PDC≥80%: 16% vs. 25%, p<0.001). After adjustment, patients initiated on SG-LAI had a 24% higher odds of having a PDC≥80% at 12 months (OR: 1.24, p<0.001), in contrast to FG-LAI patients, who had a 48% lower odds of having a PDC≥80% (OR: 0.52, p<0.001) relative to OAP patients. Moreover, SG-LAI (37% vs. 30%, p<0.001) but not FG-LAI (31% vs. 30%, p=0.776) patients were more likely to be persistent for 12 months than OAP patients. In comparison to the OAP cohort, SG-LAI patients had a 46% higher odds of persistence (OR: 1.46, p<0.001), while FG-LAI patients were not significantly different (OR: 0.95, p=0.501). **Conclusion:** Medicaid patients initiating SG-LAIs demonstrated better treatment adherence and persistence compared to OAP patients. Those initiating FG-LAIs did not show significant improvement in adherence or persistence, but instead indicated more AP relative to OAP patients. These findings suggest potential value of SG-LAIs in the treatment of schizophrenia.

NO. 54

VALBENAZINE (NBI-98854) IS EFFECTIVE FOR TREATING TARDIVE DYSKINESIA IN INDIVIDUALS WITH SCHIZOPHRENIA OR MOOD DISORDER

Lead Author: Richard C. Josiassen, Ph.D.
Co-Author(s): Gary Remington, Joshua Burke, Scott Siegert, Bill Aurora

SUMMARY:

Background: Tardive dyskinesia (TD) is a drug-induced movement disorder characterized by repetitive and involuntary movements that can be severely disabling. TD remains a significant clinical problem for which there is no approved treatment in the U.S. Phase 1 and 2 studies of valbenazine (VBZ, NBI-98854), a novel, highly selective vesicular monoamine transporter 2 (VMAT2) inhibitor, have recently yielded favorable efficacy and safety results for VBZ as a potential therapeutic option for TD. In the phase 2 KINECT 2 study, a statistically significant and clinically meaningful reduction of TD symptoms was observed using VBZ in a diverse group of psychiatric subjects with moderate to severe symptoms of TD at baseline. The purposes of this post hoc investigation were to 1) explore the efficacy of VBZ in diagnostic subgroups with TD and 2) examine the impact of baseline TD severity on treatment outcome. **Methods:** KINECT 2 (NCT01733121) was a randomized, double-blind, parallel-group, placebo-controlled, phase 2 clinical trial in moderate to severe TD patients with underlying schizophrenia, schizoaffective disorder or mood disorder (including bipolar disorder and major depressive disorder). Subjects (n=102) were randomized 1:1 to VBZ (25–75mg) or placebo administered once daily for six weeks. The primary endpoint was change from baseline (CFB) in the Abnormal Involuntary Movement Scale (AIMS) at week 6, assessed by central blinded raters who viewed AIMS videos in randomized order. Using the KINECT 2 population, CFB in AIMS scores (VBZ vs. placebo) were further explored within diagnostic subgroups (schizophrenia [n=53] or mood disorder [n=35]). Next, the CFB in AIMS was analyzed on the basis of baseline TD symptom severity (highest AIMS individual item score used as surrogate for severity). Secondary endpoints included percentage of responders (VBZ vs. placebo) in CFB in AIMS scores and Global Impression of Change–Tardive Dyskinesia (CGI-TD) score (responders defined as those reporting “much improved” or “very much improved”). **Results:** Subjects (VBZ: n=45, placebo: n=44) were grouped by psychiatric diagnosis: schizophrenia (VBZ: n=26, placebo: n=27) or mood disorder (VBZ: n=19, placebo: n=16). Mean CFB on AIMS was consistent with that observed for the overall population (VBZ, placebo:−3.6, −1.1, p=0.0005) across subsets grouped by either psychiatric diagnosis (schizophrenia: −3.0, −1.0, p<0.05; mood disorder: −4.5, −1.4, p<0.05) or TD severity (severe: −4.8, −3.2; moderate: −3.4, −1.7; mild: −3.5, −1.0; minimal: −3.0, 1.3). As previously reported, AIMS and CGI-TD responder rates between VBZ and placebo showed significant improvement (p=0.002 and p<0.0001, respectively) in the VBZ group. **Conclusion:** In this exploratory analysis, VBZ improved TD regardless of psychiatric diagnosis or TD baseline severity, suggesting that VBZ may represent an important treatment option for TD across a range of patient populations.

NO. 55

LONG-TERM TOLERABILITY OF ARIPIPRAZOLE ONCE-MONTHLY IN PATIENTS WITH SCHIZOPHRENIA FOLLOWING TREATMENT OF AN ACUTE EXACERBATION

Poster Presenter:Timothy Peters-Strickland, M.D.
Lead Author: John M. Kane, M.D.
Co-Author(s): Na Jin, Pamela Perry, Michelle Gara, Peter Hertel, Phyllis Salzman, Anna Eramo, Raymond Sanchez, Robert D. McQuade

SUMMARY:

Background: Aripiprazole once-monthly 400mg (AOM400) is a long-acting injectable formulation of the dopamine D2 receptor partial agonist aripiprazole, which is available for the treatment of schizophrenia. The efficacy of AOM400 was shown in patients experiencing an acute psychotic episode, demonstrating significant improvements in symptoms and functioning versus placebo in a double-blind, placebo-controlled, 12-week study (NCT01663532). The present open-label safety extension study investigated the long-term tolerability of AOM400 in patients with schizophrenia who initiated treatment following an acute episode. **Methods:** This was a 26-week, multicenter, open-label extension study (NCT01683058) in adult patients with schizophrenia who completed the lead-in study (12-week, double-blind, placebo-controlled) for the acute treatment of schizophrenia. Patients completing the lead-in study with outpatient status were eligible for inclusion in the extension. Patients from the placebo arm of in the lead-in study received blinded oral aripiprazole 10–20mg/day for 14 days after the first injection of AOM400. In the extension, patients received six injections of AOM400. Due to the open-label, single-treatment design, data from treated patients were summarized using descriptive statistics. No efficacy data were collected. **Results:** Of the 74 patients who enrolled in the in the extension study, 46 had received AOM400 and 28 had received placebo in the lead-in study. A total of 45 (60.8%) patients

completed the 26-week extension, and of the 29 (39.2%) patients who discontinued the study, most were lost to follow-up (n=9, 12.2%). Overall, 49 of 74 (66.2%) patients reported treatment-emergent adverse events (TEAEs) during the study. TEAEs occurring in at least five percent of patients were increased weight (n=22, 29.7%), akathisia (n=9, 12.2%), headache (n=6, 8.1%), decreased weight (n=6, 8.1%) and hyperlipidemia (n=4, 5.4%). The incidence of potentially clinically relevant weight gain (at least a seven percent increase in body weight) at the last visit was 15.5% (n=11). Serious TEAEs and TEAEs resulting in discontinuation were reported by 6.8% (n=5) and 8.1% (n=6) of patients, respectively. No other clinically relevant findings regarding vital signs, injection site, laboratory values or scales of suicidality were reported. **Conclusion:** Long-term treatment with AOM400 following an acute exacerbation of schizophrenia was well tolerated with low rates of discontinuation due to adverse events or lack of efficacy. The pattern of TEAEs is consistent with the tolerability profile of AOM400, and no new safety signals arose with continued long-term treatment. Treatment with AOM400 was well tolerated in patients with schizophrenia who initiated treatment following an episode of acute exacerbation of symptoms. This research was supported by Otsuka Pharmaceutical Development and Commercialization, Inc., H. Lundbeck A/S

NO. 56

EPIGENETIC CHANGES OF BDNF PROMOTER METHYLATION IN POST-TRAUMATIC STRESS DISORDER: FINDINGS FROM THE KOREAN COMBAT VETERANS OF THE VIETNAM WAR

Lead Author: Jee In Kang

Co-Author(s): Tae Yong Kim, M.D., Ph.D., Hae Gyung Chung, M.D., Jin Hee Choi, M.D., Ph.D., Moon Yong Chung, M.D., Ph.D., Chan-Hyung Kim, M.D., Ph.D., Sung Yun Sohn, M.D., Jooah Cheon, M.D., Se Joo Kim M.D., Ph.D.

SUMMARY:

Background: The brain-derived neurotrophic factor (BDNF) plays a crucial role in modulating resilience and vulnerability to stress. Reduced BDNF function and epigenetic regulation of the BDNF gene may be involved in the pathophysiology of post-traumatic stress disorder (PTSD). This study investigated if BDNF gene methylation is a resilience marker of PTSD among male Vietnam War veterans. **Methods:** A total of 253 Korean combat veterans of the Vietnam War were included. The Clinician-Administered PTSD Scale (CAPS) and Combat Exposure Scale (CES) were assessed. BDNF DNA methylation levels at four CpG sites within the promoter region were quantified in the peripheral blood using pyrosequencing. The effects of BDNF methylation levels and clinical variables on the diagnosis of PTSD were tested using binary logistic regression analysis. **Results:** Using the CAPS interview, combat veterans were grouped into those with (n=127) and without (n=126) PTSD. Subjects with PTSD showed a significant higher DNA methylation at four CpG sites at the BDNF promoter compared to those without PTSD. High BDNF methylation status at the fourth CpG site, high CES and alcohol use significantly predicted PTSD diagnosis. **Conclusion:** This study demonstrated an association between higher DNA methylation of the BDNF promoter region and PTSD. Our findings suggest that altered epigenetic programming of the BDNF gene is related to the pathophysiology of PTSD and stress resilience after trauma exposure. **Keywords:** PTSD, DNA Methylation, Epigenetics, BDNF, Resilience, Stress

NO. 57

JUVENILE FIBROMYALGIA AND ITS NEUROPSYCHIATRIC IMPLICATIONS: REVIEW OF LITERATURE AND STATE OF CURRENT RESEARCH

Lead Author: Amanjot Kaur, M.B.B.S.

Co-Author(s): Vishal Madaan, M.D., M.B.B.S.

SUMMARY:

Juvenile fibromyalgia is characterized by chronic widespread musculoskeletal pain of unknown etiology affecting children and adolescents, along with associated symptoms of fatigue, cognitive difficulties, headache, irritable bowel symptoms, sadness of mood, anxiety, disturbed sleep and dysautonomia. The mean age of onset is early adolescence, and symptoms tend to persist into adulthood for the majority of patients. Juvenile fibromyalgia is more commonly diagnosed in females, similar to the higher prevalence of its adult counterpart in women. In clinical practice, the American College of Rheumatology 1990 criteria and Yunus criteria are widely used for diagnosing juvenile fibromyalgia, which involves chronic pain along with the presence of tender points on physical examination. Dysfunctional ascending and descending pain processes, central sensitization, neurotransmitter imbalance, neuroendocrine alterations, association with HLA, and gene

polymorphism with 5HTT transported gene, D2/D4 receptor genes and COMT, along with environmental predisposition, are proposed pathophysiological mechanisms underlying the diagnosis of juvenile fibromyalgia. Along with disruptive effects on physical functioning, various psychiatric comorbidities and psychosocial implications have been noted with juvenile fibromyalgia, including sleep disturbance, major depression, anxiety, behavioral disturbance, temperamental instability, school absenteeism and interpersonal conflicts, markedly reducing the quality of life. Evidence is limited for management of juvenile fibromyalgia, and various pharmacological, psychological and physical interventions, including aerobic exercises and strength and neuromuscular training, are being studied in various clinical trials. There are no FDA-approved medications for treatment of this condition, and most of the treatment approaches are potentially extrapolated from the adult literature. Non-steroidal anti-inflammatory drugs for treatment of pain and various psychotropic medications, such as selective norepinephrine reuptake inhibitors, gabapentin and pregabalin, that are found to be beneficial in adult fibromyalgia are being studied and may be useful in targeting the associated symptoms. However, the safety and tolerability of these medications in the pediatric population is an area of concern. Cognitive behavior therapy combined with parental guidance and exercise-based approaches have been efficacious in improving the symptoms of juvenile fibromyalgia as well as overall quality of life. While research on appropriate and early diagnosis and optimal management of this condition is very limited, further investigation is required to understand the pathophysiology and its comorbidities with other neuropsychiatric disorders and how best to intervene. A multidisciplinary treatment approach involving a combination of educational, cognitive-behavioral, physical and pharmacological interventions is proposed as the area of further research.

NO. 58

A SIX-MONTH, OPEN-LABEL, MULTICENTER STUDY OF THE SAFETY AND EFFICACY OF MULTI-LAYER RELEASE METHYLPHENIDATE (MLR) IN ADULTS WITH ADHD

Lead Author: Sohail Khattak, M.D.

Co-Author(s): Ann Childress, M.D., Linda Harper, M.D., Andrew Cutler, M.D., Angelo Fallu, M.D., Graeme Donnelly, M.Sc., Joseph Reiz, B.Sc.

SUMMARY:

This six-month, open label, multicenter, phase 3 study evaluated the long-term safety and efficacy of MLR in 184 adult subjects with ADHD in an outpatient setting. Subjects were enrolled following successful completion of a double-blind study. The initial starting dose was chosen by investigators, followed by weekly titration until an optimal dose was achieved (25, 35, 45, 55, 70, 85 or 100mg/day). Safety and efficacy evaluations occurred at monthly intervals. Efficacy evaluations included the clinician-rated ADHD-5-Rating Scale (ADHD-5-RS), Patient Satisfaction Survey (PSS), Weiss Functional Impairment Rating Scale (WFIRS), Behavior Rating Inventory of Executive Function (BRIEF-A), Adult ADHD Quality of Life (AAQoL), Pittsburgh Sleep Quality Index (PSQI) and Columbia Suicidality Rating Scale (CSSRS). Safety endpoints were used to assess the primary objectives of the study. The same measurements used in the double-blind study were used in this study to allow for change from baseline and end of double-blind scores and paired t-tests. After six months of treatment, significant improvement in mean ADHD-5-RS score across all doses of MLR was observed compared to baseline (−24.8 [10.02], $p<0.0001$) and end of double-blind (−11.7 [10.50], $p<0.0001$). Subjects had significantly improved functionality and executive functioning scores compared to baseline on total score and all subscales (WFIRS-S and BRIEF-A, $p<0.0001$). AAQoL scores significantly improved over the length of the study when compared to baseline values on the total score ($p<0.0001$), as well as the life productivity ($p<0.0001$), psychological health ($p<0.0001$), life outlook ($p<0.0001$) and relationships ($p<0.0001$) subscales. Subjects observed improvements in satisfaction with onset of action, duration of action, level of awareness, ability to fall asleep, lunch appetite, dinner appetite, overall adverse events and overall efficacy compared to baseline (PSS, $p<0.05$). Sleep quality was not negatively impacted compared to baseline and end of the double-blind as measured by the PSQI. Subjects had no observed suicidal behaviors, as measured by the CSSRS. No clinically significant laboratory, vital signs or ECG findings or changes were reported. Nine subjects discontinued study medication due to treatment-emergent adverse events (TEAEs). Most (98%) TEAEs were mild or moderate in severity. Four serious adverse events (SAEs) occurred during the study. All SAEs were determined to be not related to study treatment. **Conclusion:** MLR was safe and effective in the

treatment of ADHD in adults over a six-month period. Superior ADHD symptom improvement compared to baseline and the end of the double-blind phase was observed, with significant improvements in functional outcome, executive function, quality of life, patient satisfaction and sleep quality. There were few discontinuations due to adverse events, and there were no clinically significant laboratory findings or observed suicidal behaviors.

NO. 59

INFLUENCE OF DEPRESSION ON WORKING MEMORY MEASURED BY DIGIT BACKWARD SPAN IN SUBJECTS WITH MILD COGNITIVE IMPAIRMENT AND DEMENTIA

Lead Author: Chaeri Kim
Co-Author(s): Yang-ho Roh, M.D., Min-Jea Kim, M.D., Sang Woo Hahn, M.D., Ph.D., Han-yong Jung, M.D., Ph.D., Soyoung Irene Lee, M.D., Ph.D., Se-Hoon Shim, M.D., Ph.D., Jeongjae Bak, M.D., Byungjoo Lee, M.D.

SUMMARY:
In this study, we explored the influence of depression on working memory in patients with mild cognitive impairment (MCI) and dementia. Clinical and neuropsychological data of 43 subjects with MCI (n=17) and dementia (n=26) who had visited the Department of Psychiatry at Soonchunhyang University Seoul Hospital were collected. The subjects were divided into depressed (n=18) and nondepressed (n=25) groups based on the Korean version of Short Geriatric Depression Scale (SGDS-K). A two-way ANOVA test was conducted to evaluate the influence of diagnosis (MCI and dementia), the presence of depression and their influence on working memory, which was measured by the digit forward and backward span tests. As a result, among the patients with MCI, the score of the digit backward span test in the depressed group was significantly lower than in the nondepressed group. However, among the patients with dementia, there was no significant difference in the digit backward span test between the depressed and nondepressed groups. This study suggests that depression could deteriorate working memory as measured by the digit backward span test in patients with MCI, relative to patients with dementia, and it also implicates the clinical importance of diagnostic assessment for depression in patients with MCI.

NO. 60

SOCIODEMOGRAPHIC STATUS, PSYCHOLOGICAL PROBLEMS AND QUALITY OF LIFE IN URBAN-DWELLING SINGLE MOTHERS IN SOUTH KOREA

Poster Presenter:Ga Eun Kim, M.D.
Lead Author: Eui-Jung Kim, Ph.D.
Co-Author(s): Hee Yeon Choi, M.D.

SUMMARY:
In South Korea, the rates of divorce and separation are increasing rapidly, and most of single mothers are living in poverty. Therefore, considering the psychological problems and socioeconomic conditions of single mothers has become more important. This study examined sociodemographic and psychological variables and their factors' correlation with quality of life (QoL) in single mothers. Participants were 195 single mothers living in an urban community in South Korea. Participants completed self-report questionnaires examining sociodemographic characteristics and including the following self-rating scales: the Global Assessment of Recent Stress, Center for Epidemiologic Studies Depression Scale, Scale for Suicidal Ideation, Korean version of the Alcohol Use Disorder Identification Test and World Health Organization QoL Assessment Instrument. Regarding sociodemographic variables, high educational level ($p=0.009$), high monthly income ($p<0.001$), living in own house ($p<0.001$) and divorced or separated on economic grounds ($p<0.001$) showed significantly high QoL in single mothers. Age ($r=0.208$, $p=0.004$) was significantly positively correlated with QoL; stress ($r=-0.254$, $p<0.001$), depressive symptoms ($r=-0.314$, $p<0.001$), suicidal ideation ($r=-0.217$, $p<0.001$) and alcohol-related problems ($r=-0.383$, $p<0.001$) were significantly negatively correlated with QoL. Alcohol-related problems, financial cause of single motherhood, depressive symptoms and income explained 37.7% of variance in total QoL by multiple regression analysis. Interventions aiming to promote single mothers' QoL should reduce the social burden and psychological problems of single mothers. Specifically, interventions providing psychological support should target new single mothers in order to reduce distress in single-mother families.

NO. 61

COMPARISON OF BEHAVIORAL PROBLEMS IN CHILDREN WITH NEWLY DIAGNOSED, UNTREATED ADHD AND CHILDREN WITH EPILEPSY

Poster Presenter:Hee Yeon Choi, M.D.
Lead Author: Eui-Jung Kim, Ph.D.

SUMMARY:

Attention-deficit/hyperactivity disorder (ADHD) is a common childhood illness, and various comorbid emotional, social and behavioral problems are frequently identified in children with ADHD. The delay in diagnosis and treatment of children with ADHD may lead to result in the declining of functions and the sequela of comorbid psychopathology. Children with epilepsy also experience significant behavioral disturbances, including hyperactivity and attention problems. In this study, we compared the behavioral problems of 151 children with newly diagnosed, untreated ADHD and 60 children with epilepsy, aged 6–12. Among 1,101 urban community children, 166 high-risk ADHD children were detected using an ADHD rating scale. The full scale of intelligence quotient (IQ), Comprehensive Attention Test (CAT), Stroop Color-Word Test, Children's Color Trails Test and structured psychiatric interview were used to diagnose ADHD in the 166 high-risk ADHD children. We used the mother's rating on the Child Behavior Checklist (CBCL) to assess behavioral problems. Of children with epilepsy, those with an IQ lower than 70, comorbid ADHD, brain damage in brain magnetic resonance imaging (MRI) and uncontrolled seizure were excluded. There were no significant associations between sociodemographic variables and behavioral problems in children with newly diagnosed, untreated ADHD and epilepsy. Compared to children with epilepsy, children with newly diagnosed, untreated ADHD were predominantly male (72.8% vs. 56.1%, p<0.001), younger (8.34±1.837 years vs. 9.46±1.925 years, p<0.001) and had a lower IQ (100.06±13.93 vs. 111.89±15.56, p<0.001). They had higher total CBCL scores (66.58±10.85 vs. 51.28±9.56, p<0.001) and scores on all eight subscales of the CBCL (p<0.001) than children with epilepsy. 112 (74.2%) children with newly diagnosed, untreated ADHD showed significant total behavior problems (CBCL t score≥60) compared 17.5% of children with epilepsy showing significant total behavior problems. After controlling for age, sex and IQ, children with newly diagnosed, untreated ADHD showed higher total scores of CBCL and all subscales of CBCL (p<0.001), except the somatic complaints subscale (p=0.61), than children with epilepsy by analysis of covariance. Children with newly diagnosed, untreated ADHD suffer from various behavioral problems; therefore, the early assessment of and interventions for comorbid behavioral problems should be conducted for optimal management of childhood ADHD.

NO. 62

PHARMACOLOGICAL CHARACTERISTICS OF MAJOR HUMAN METABOLITES OF CARIPRAZINE

Poster Presenter:Nika Adham, Ph.D., M.Sc.
Lead Author: Béla Kiss, M.Sc.
Co-Author(s): Zsolt Némethy, Ph.D., István Laszlovszky, Ph.D., Pharm.D., István Gyertyán, Ph.D., Nika Adham, Ph.D., M.Sc.

SUMMARY:

Background: Cariprazine (CAR), an orally active and potent dopamine (DA) D2/D3 receptor partial agonist with preferential binding to D3 receptors and partial agonism at serotonin (5-HT) 5-HT1A receptors was approved for the treatment of schizophrenia and bipolar mania by the FDA. In humans, two major metabolites, desmethyl-cariprazine (DCAR) and didesmethyl-cariprazine (DDCAR), were identified. For better understanding the roles of metabolites in the efficacy of CAR, their pharmacology was profiled and compared with CAR. **Results:** Similar to CAR, both metabolites showed high affinity for human D3, D2L, 5-HT1A, 5-HT2B and 5-HT2A receptors (Ki, nM: DCAR: 0.038; 0.81; 2.93; 0.47; 11.8; DDCAR: 0.057; 1.41; 1.70; 0.53; 11.5; CAR: 0.085; 0.49; 2.6; 0.58; 18.8). In membranes from cells expressing hD2 or D3 receptors, DDCAR and CAR did not stimulate [35S]GTPÎ³S binding, but both antagonized the stimulatory effect of DA (pKb: hD2: 9.02 vs. 9.12; hD3: 10.04 vs. 9.50). In the same assay using membranes from cells expressing h5-HT1A receptors, DDCAR and CAR showed partial agonist activity with maximal stimulation (Emax) of 65% vs. 34% and pEC50: 7.51 vs. 8.64. DCAR, DDCAR and CAR showed partial agonist activity in cAMP signaling assay in cells expressing D2 or D3 receptors (pEC50: hD2: 8.9; 8.7; 9.0; hD3: 7.55; 7.82; 7.80), with Emax of about 70% (hD2) and 50% (hD3). DDCAR and CAR showed full agonist activity in cAMP signaling assay in cells expressing h5-HT1A receptors (Emax: 99% and 95%, respectively), whereas DCAR was less efficacious (Emax=70%). DCAR, DDCAR and CAR showed pure antagonist profile in 5-HT-stimulated [Ca2+]i assay in cells expressing h5-HT2B receptors (pIC50: 8.36; 8.67; 8.50). Both DDCAR and CAR showed low affinity in the inhibition of hERG channel activity (IC50: 6.6 vs. 5.03μM). DDCAR and CAR increased rat striatal DA turnover by 75% and 125%, respectively, over basal, and both reduced cortical 5-HT turnover by 22%. DDCAR and CAR showed in vivo occupancy of D3 receptors in rat brains (oral ED50: 0.41 vs. 0.43mg/kg), whereas in D2 receptor occupancy, CAR was more potent

(ED50: 0.23 vs. 0.58mg/kg), in agreement with monkey PET results (Ki: 7 vs. 20nM). In rodent models for antipsychotic activity, DDCAR was 3–10-fold less potent than CAR (oral ED50, mg/kg)—locomotor activity (rat): spontaneous (2.0 vs. 0.18), amphetamine-induced (0.72 vs. 0.12), phencyclidine-induced (0.25 vs. 0.09), MK-801-induced (mice) (0.2 vs. 0.049); apomorphine climbing (mice): 0.92 vs. 0.27; conditioned avoidance response (rat): 2.2 vs. 0.84. No catalepsy was found at a dose of 100mg/kg with DDCAR and 85mg/kg with CAR. **Conclusion:** Both in vitro and in vivo pharmacological profiles of DCAR and DDCAR demonstrated a high degree of similarity with the parent drug CAR. Considering these preclinical results and the human pharmacokinetics of the metabolites, it is assumed that they contribute significantly to the clinical efficacy of CAR.

NO. 63

CSF PK AND PD EFFECTS OF MULTIPLE DOSES OF BI 425809, A NOVEL GLYT1 INHIBITOR, IN HEALTHY VOLUNTEERS

Lead Author: Oliver Kleiner, Ph.D.
Co-Author(s): Michael Desch, Christina Schlecker, Holger Rosenbrock, Sophia Goetz, Christian Schultheis, Karl-Heinz Liesenfeld, Glen Wunderlich, Sun-Young A. Yum, Sven Wind, Gwenaelle Fillon

SUMMARY:

Background: BI 425809, a glycine transporter 1 (GlyT1) inhibitor, is a new chemical entity being developed for the treatment of cognitive impairment associated with schizophrenia (CIAS) and Alzheimer's disease. The objectives of this trial were to assess 1) the exposure of BI 425809 in cerebrospinal fluid (CSF) relative to plasma, 2) CSF glycine levels, and 3) safety and tolerability of BI 425809. Methods: A single-center trial evaluated 14-days' multiple-dose treatment of BI 425809 in four dose groups (5, 10, 25 and 50mg). A total of 25 healthy male volunteers (22 completers) participated in the trial. Plasma and CSF exposures, including AUC0-14 and C_{max} after first dose and $C_{pre,ss}$ at steady state, were measured. Changes in CSF glycine levels in percent change from baseline after single dose and in steady state of BI 425809 were examined as a pharmacodynamic (PD) marker. Safety was evaluated with adverse event (AE) monitoring, clinical laboratory assessments, vital signs, 12-lead electrocardiogram (ECG), physical examinations, ophthalmological tests and suicidality assessments (C-SSRS). **Results:** A clear dose-dependent increase in CSF exposure and a linear CSF/plasma correlation over dose levels were observed after single dose and in steady state of BI 425809. BI 425809 was absorbed in plasma with median t_{max} values of 3–5h in all dose groups. In CSF, the maximum concentrations were observed in a median t_{max} range of 5–8h. The increases in glycine after single and multiple doses of BI 425809 were predominantly dose dependent but not dose proportional. The glycine profiles were much flatter and timely delayed compared to the pharmacokinetic (PK) profiles in CSF. Two subjects (8.0%) discontinued due to AEs (moderate procedural headache and moderate headache, nausea, vomiting). A total of 22 of the 25 treated subjects (88.0%) reported at least one treatment-emergent AE. Procedure-related AEs were most common. An AE of severe intensity (neck pain) was reported in one subject (4.0%) in the 10mg dose group. Drug-related AEs (mild nausea, abdominal pain, upper abdominal pain) were reported in one subject (4.0%) in the 25mg dose group. No protocol-specified AEs of special interest, deaths or other serious AEs were reported. There were no safety-related findings of clinical significance in the clinical laboratory evaluation, ECG, vital signs or ophthalmological tests. No suicidal ideation or behavior was observed during the trial. **Conclusion:** BI 425809 has a clear dose-dependent increase in CSF exposure and a linear CSF/plasma correlation over dose levels, enabling prediction of CSF exposure from plasma levels. Increase of CSF glycine levels confirmed indirect target engagement in the central compartment and thus demonstrated proof of mechanism of BI 425809. BI 425809 was generally well tolerated.

NO. 64

FREQUENCY OF URINE DRUG MONITORING AND ILLICIT SUBSTANCE USE IN PATIENTS WITH MENTAL ILLNESS

Lead Author: Mancia Ko, Pharm.D.
Co-Author(s): Patricia Woster, Pharm.D., Thomas Smith, M.D.

SUMMARY:

Objective: Examine the relationship between the frequency of urine drug monitoring and illicit substance use in patients prescribed antipsychotic medications. **Methods:** Patients prescribed antipsychotic medications who had two or more urine samples (collections separated by at least six months) submitted to the laboratory for testing

between January 2013 and November 2015 were included in the analysis. Baseline (first sample from the patient) and final (last sample from the patient) samples were tested for the presence of illicit substances (including cocaine metabolite [benzoylecgonine], heroin metabolite [6-MAM], marijuana metabolite [THC], MDMA and phencyclidine) using liquid chromatography/tandem mass spectrometry. Patients were categorized based on the frequency of urine drug tests (UDTs; ≤6 samples/year, 7–10 samples/year or ≥11 samples/year). Adjusted odds ratios (aOR) and 95% confidence intervals (CI) were calculated using multiple logistic regression analysis with the following independent variables: sex, age decade, primary payor, geographic region and frequency of UDT. **Results:** Of the 3,399 patients included in the analysis, the majority (79.1%) submitted ≤6 samples annually, whereas 13.8% and 7.1% of patients submitted 7–10 or ≥11 samples annually, respectively. Illicit substance use was detected in 20.2% and 17.5% of baseline and final UDT samples, respectively. Baseline illicit substance use did not differ significantly by annual UDT frequency (≤6 samples, 20.6%; 7–10 samples, 18.9%; ≥11 samples, 17.8%). However, for the final samples, after accounting for demographic variables, patients with the highest annual UDT frequency had the lowest rate of illicit substance use detected. Illicit substance use was detected in final samples in 9.1% of patients with ≥11 samples compared to 17.6% of patients with ≤6 samples (aOR=0.43, 95% CI [0.27, 0.68]). Male sex, younger age and self-pay primary payor demographic factors appeared to be associated with more frequent illicit substance use. **Conclusion:** More frequent urine drug monitoring was associated with lower rates of illicit substance use detected. Frequent urine drug monitoring may have the potential to influence specific health behaviors, such as illicit substance use. This research was supported by Ingenuity Health, a service of Ameritox, Ltd.

NO. 65

A MARKER OF POOR DATA QUALITY: IDENTICAL PANSS RATINGS DURING SCREENING PERIOD PREDICT IDENTICAL PANSS RATINGS AFTER RANDOMIZATION

Lead Author: Alan Kott, M.D.
Co-Author(s): David G. Daniel, M.D.

SUMMARY:

Background: A primary focus of data quality monitoring in clinical trials is early identification and remediation of issues that may detract from signal detection. We have previously identified identical Positive and Negative Syndrome Scale (PANSS) ratings (30/30 PANSS items scored the same across consecutive visits) as markers of poor ratings quality. In 10 global schizophrenia trials, identical ratings occurred in approximately 4.7 % of visits. In this analysis, we examined whether the incidence of identical PANSS ratings after randomization was associated with the presence of identical PANSS ratings in the screening period. **Methods:** Using negative binomial regression, we have analyzed blinded data from 13 international double-blind, placebo-controlled schizophrenia trials involving 7,142 subjects (60,795 visits) for the incidence of identical PANSS ratings after randomization between those subjects who recorded an identical rating in the screening period compared to those who did not. We present the outcomes in a form of incidence rate ratio (IRR) to increase interpretability of the results. **Results:** The mean number of identical PANSS ratings after randomization was 0.12 (SD=0.46) in the group of subjects who did not record an identical rating in the screening period and 1.44 (SD=1.92) in the group that did record an identical rating in the screening period. Our data indicate that the presence of identical PANSS rating in the screening period increases the expected number of identical PANSS ratings after randomization by 555.8% (IRR=6.56, SE=0.69, CI [5.33, 8.06]). **Conclusion:** Our data indicate strong and significant association between the incidence of identical ratings after randomization and the presence of identical ratings during the screening period. We have previously shown the likelihood of a subject being scored identically on the PANSS across consecutive visits to be extremely small. The most plausible explanation for scoring 30/30 PANSS items identically across consecutive visits is that the ratings from the previous visits were referenced in lieu of an independent interview and ratings process. The fact that most identical ratings after randomization in the data could be predicted by the presence of identical ratings during the screening period offers a unique opportunity to remediate the ratings process prior to randomization.

NO. 66

DOES EARLY IMPROVEMENT WITH VILAZODONE PREDICT RESPONSE AND REMISSION IN PATIENTS WITH MDD?

Lead Author: Kenneth Kramer, Ph.D.

Co-Author(s): Suresh Durgam, M.D., Changzheng Chen, Ph.D., Carl Gommoll, M.S., John Edwards, M.D., Ph.D., Arif Khan, M.D.

SUMMARY:

Background: APA treatment guidelines for major depressive disorder (MDD) indicate that adequate treatment duration (four to eight weeks) may be needed before concluding if a patient is responsive to treatment. However, understanding if early symptom improvement with various antidepressants is predictive of subsequent response or remission may be useful so that patients can be properly advised about their medications and treated accordingly. Vilazodone (VLZ), which is approved at doses of 20–40mg/day for the treatment of MDD in adults, has shown efficacy in four double-blind, placebo (PBO)-controlled trials (NCT00285376, NCT00683591, NCT01473381, NCT01473394), including significantly higher Montgomery-Åsberg Depression Rating Scale (MADRS) response rates at end of treatment compared to PBO ($p<0.05$). Post hoc analyses of data from these four trials evaluated if early improvement with VLZ was predictive of later response or remission. **Methods:** In all four MDD studies, VLZ 40mg/day was titrated at 10mg/day (one week), 20mg/day (one week) and 40mg/day (six to eight weeks). Early improvement, defined as at least 30% reduction from baseline in MADRS total score, was analyzed at week 2. Response (MADRS total score reduction ≥50%) and remission (MADRS total score ≤10) were analyzed using week 8 data from all four studies. Parameters for the predictor analysis included positive predictive value (PPV), sensitivity (SN), negative predictive value (NPV) and specificity (SP). **Results:** At week 2, all VLZ-treated patients were receiving 20mg/day. The percentage of patients with early improvement was higher with VLZ (31.4%) than with PBO (25.5%). PPV analyses indicated that among early improvers, 60.3% and 69.7% of PBO- and VLZ-treated patients, respectively, were responders at week 8; 48.1% and 57.1% were remitters at week 8. However, SN analyses indicated that among week 8 responders, only 47.7% and 48.9% were early improvers; among week 8 remitters, 56.7% and 48.9% were early improvers. NPV analyses indicated that the majority of non-improvers at week 2 were also non-responders (PBO=77.3%, VLZ=66.6%) and non-remitters (PBO=87.4%, VLZ=81.3%) at week 8. SP analyses indicated that most week 8 non-responders (PBO=83.1%, VLZ=82.7%) and non-remitters (PBO=83.1%, VLZ=80.5%) did not have early improvement at week 2. All predictor models for PBO and VLZ were statistically significant ($p<0.05$). **Conclusion:** Pooled data from four MDD studies indicated that, at week 2, VLZ patients had higher rates of early improvement than PBO patients. The predictor model showed that only 50–60% of responders and remitters were early improvers, possibly because many VLZ-treated patients had not reached their optimal therapeutic dose by week 2. Per FDA-approved recommendations, titration over several weeks to the maximum approved dose of VLZ 40mg/day may be required in some MDD patients. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate.

NO. 67

A COMPARATIVE STUDY OF THE EFFECTS OF BUPROPION AND ESCITALOPRAM ON INTERNET GAMING DISORDER PATIENTS

Poster Presenter:Jeong Ha Park, M.D.
Lead Author: Young Sik Lee, M.D., Ph.D.
Co-Author(s): Joo Hyung Youh, M.D., Jae Young Ahn, M.D., Jinuk Song, M.D., Jeong Ha Park, M.D., Doug Hyun Han, M.D., Ph.D., Kyung Joon Min, M.D., Ph.D.

SUMMARY:

Background: Internet gaming disorder (IGD) has been included in section III of the *Diagnostic and Statistical Manual of Mental Disorders , Fifth Edition* (*DSM-5*). Reflecting these recent trends, many treatment strategies have been considered and suggested of their possibility in IGD. In our study, we compared the efficacy of bupropion and escitalopram treatment in IGD patients. **Methods:** 119 adolescents and adults with IGD were recruited. Forty-four participants were treated with bupropion SR for six weeks (bupropion group), 42 participants were treated with escitalopram for six weeks (escitalopram group) and 33 patients without any medication were observed in the community for six weeks (observation group). At baseline and a six-week follow-up period, all subjects were evaluated by the Clinical Global Impression-Severity Scale (CGI-S), Young Internet Addiction Scale (YIAS), Beck Depression Inventory (BDI), ADHD Rating Scale (ARS), and Behavioral Inhibition and Activation Scales (BIS/BAS). **Results:** The results showed that both escitalopram and bupropion had an improvement effect on all clinical symptom scales after six weeks of treatment as compared to the simple observation group. Additionally, the bupropion group showed more improvement on CGI-S, YIAS, ARS and BIS scores than the

escitalopram group. In all three groups, CGI-S score was significantly correlated with YIAS score, ARS score, BIS score and BIS/BAS score, but not significantly correlated with BDI score. YIAS score was also correlated with CGI-S score, ARS score, BIS score and BIS/BAS score. In the bupropion group, correlation between CGI-S score and YIAS score was higher than in all groups' correlation analysis, and CGI-S score was significantly correlated with YIAS score, ARS score, BIS score and BIS/BAS score, but not significantly correlated with BDI score. Subsequently, YIAS score was only significantly correlated with CGI score. In the escitalopram group, CGI-S score was only significantly correlated with YIAS score. **Conclusion:** Both bupropion and escitalopram were effective in treating and managing IGD symptoms. Moreover, bupropion appeared to be more effective in improving attention and impulsivity in patients with problematic online gameplay than escitalopram. In addition, attention and impulsivity might be important for management of IGD. **Keywords:** Internet Gaming Disorder, Escitalopram, Bupropion

NO. 68

MEDICAID SPENDING ASSOCIATED WITH PALIPERIDONE PALMITATE OR ORAL ATYPICAL ANTIPSYCHOTIC TREATMENT AMONG ADULTS RECENTLY DIAGNOSED WITH SCHIZOPHRENIA

Lead Author: Patrick Lefebvre, M.A.
Co-Author(s): Dominic Pilon, Erik Muser, Rhiannon Kamstra, Bruno Emond, Kruti Joshi

SUMMARY:

Background: Schizophrenia is a debilitating chronic mental illness with a high burden of disease and related costs. Once-monthly paliperidone palmitate (PP1M) is a long-acting injectable antipsychotic that may improve adherence, reduce hospitalizations and lower medical costs compared to oral atypical antipsychotics (OAA). However, the impact of PP1M treatment on health care costs in patients recently diagnosed with schizophrenia remains unknown. **Objective:** Compare Medicaid spending between patients initiated on PP1M or OAA in a population aged 18–25 with schizophrenia. **Methods:** Medicaid data from IA, KS, MS, MO and NJ (September 2008–March 2015) were used to identify adults (18 years or older) with schizophrenia initiated on PP1M or OAA (index date) during or after September 2009 (Overall group). Baseline characteristics were assessed during the 12 months before index date. Patients aged 18–25 at the index date were defined as "recently diagnosed" with schizophrenia, using age as a proxy for duration of illness. Inverse probability of treatment weighting (IPTW) was used to adjust for baseline differences and compare outcomes for PP1M versus OAA in the overall and recently diagnosed groups. Medical and pre-rebate pharmacy costs were assessed during the 12 months after index date and compared using mean monthly cost differences (MMCD), calculated using univariate weighted linear regression models with p-values obtained from a nonparametric bootstrap, and were descriptively compared for the overall and recently diagnosed groups. All costs were inflated to 2015 U.S. dollars. **Results:** Overall, patients initiating PP1M (n=2,053) were younger (mean age: 41 vs. 44), with a higher proportion having baseline antipsychotic use (88% vs. 62%) compared to OAA patients (n=22,247). Recently diagnosed patients comprised 11% and 10% of PP1M and OAA cohorts, respectively. IPTW resulted in balanced baseline demographic and clinical characteristics as well as health care costs (overall: PP1M=11,612, OAA=12,688; recently diagnosed: PP1M=1,107, OAA=1,288). Overall, PP1M patients had significantly lower medical costs compared to OAA (MMCD=−$286, p<0.001), offsetting most of the higher pharmacy costs (MMCD=$323, p<0.001), resulting in similar total costs for both groups (MMCD=$37, p=0.709). Among recently diagnosed patients, lower medical costs (driven mainly by lower home care costs [MMCD=−$395, p<0.001]) associated with PP1M (MMCD=−$466, p=0.028) appeared to completely offset higher pharmacy costs, resulting in similar total costs (MMCD=−$144, p=0.553). **Conclusion:** Overall, PP1M patients demonstrated significantly lower medical costs, which offset higher pharmacy costs during follow-up relative to OAA patients. Patients aged 18–25 treated with PP1M appeared to have a greater magnitude of medical cost savings versus OAA than the overall PP1M-treated population, highlighting the potential economic impact of using PP1M in adults recently diagnosed with schizophrenia.

NO. 69

ANTIDEPRESSANT EFFECT OF WULING POWDER IN LEARNED HELPLESSNESS MICE MODEL

Lead Author: Dongmei Li, M.A.

SUMMARY:

Depression disorder contributes greatly to the global burden of disease, and low response rate was witness with monoamine-based antidepressants,

urging the need for a new treatment strategy. Wuling powder, a traditional Chinese medicine (TCM), has been claimed to be fully potent in improving insomnia and comorbid depression; however, the systemic research on depression is lacking, and the mechanism is unclear. In this study, we found that Wuling powder exhibited prominent antidepressant effects in a well-validated animal model of depression, learned helplessness (LH). Since accumulated evidences strongly suggest that mitochondrial deficit is implicated in major depression and 18kDa translocator protein (TSPO) plays an important role in regulating mitochondrial function, we investigated the antidepressant mechanisms of Wuling powder, focusing on its effects on TSPO-mediated mitophagy pathway. Results showed that Wuling powder significantly elevated the expression of TSPO, VADC1, Pink1, Beclin1and KIFC2, indicating a favorable improvement in mitochondrial function. Present results demonstrated that Wuling powder effectively improved depressive symptoms and attenuation in the mitochondrial dysfunction underlies the mechanism of Wuling treatment.

NO. 70

IDENTIFY THE ROLE OF ATTACHMENT AND RELATIONAL MEASURES IN PREDICTING POSTDISCHARGE IMMINENT SUICIDALITY

Lead Author: Shuang Li, M.D., Ph.D.
Co-Author(s): Sean Rumschik, Jessica Briggs, Zimri Yaseen, Molly Duffy, Anna Frechette, Igor Galynker

SUMMARY:

Background: Suicide is the tenth leading cause of death worldwide. Over the past few decades, there has been much progress in identifying long-term risk and protective factors for suicide deaths and suicide attempts. However, assessing imminent suicide risk upon discharge still remains a big challenge for clinicians, and little is known about the roles of adult attachment style or relational experiences as predictors of future imminent suicidal behavior. We expect insecure attachment to associate with postdischarge suicidality and to mediate the effects of positive relational feelings on suicidality. **Methods:** Adult patients admitted to inpatient psychiatric units at a large urban hospital with current suicide risk were assessed for suicidal intensity both upon admission and two months following discharge from the hospital, using the Columbia Suicide Severity Rating Scale. During the admission, patients' adult attachment styles were measured with the Relationship Scales Questionnaire, a 30-item self-report measure. Patient self-report of strong positive or negative feelings toward others was obtained at admission and at discharge from the corresponding items on the Affective Intensity Rating Scale. Correlation and moderation analyses were performed to determine the associations between attachment, relational measures and aggregate measures of suicidal ideation and behavior. **Results:** Of the 200 patients consenting to study participation and providing sufficient data for inclusion, 125 were reached for two-month follow-up. Suicidal intensity leading to inpatient admission did not correlate with any attachment style; however, fearful attachment was positively correlated with aggregate measures of suicidal ideation and behavior in the two-month period following discharge (ρ=0.30, p=0.001, n=124). Fearful attachment was associated with intense negative feelings toward others at both admission (ρ=0.23, p=0.001, n=199) and discharge (ρ=0.25, p=0.003, n=142), as well as intense positive feelings toward others upon admission (ρ=0.21, p=0.003, n=199). Moderation analyses were not significant, but effect directions were consistent with the hypothesis that positive feelings toward others could be associated with suicidality in the context of highly insecure, fearful attachment. **Conclusion:** Adult attachment style, especially the intensity of a fearful attachment, is associated with suicidal behavior following discharge. This may be a useful measure to consider when assessing suicide risk.

NO. 71

PSYCHIATRIC STABILITY MAINTAINED IN TARDIVE DYSKINESIA SUBJECTS TREATED WITH VALBENAZINE (NBI-98854)

Lead Author: Jean-Pierre Lindenmayer, M.D.
Co-Author(s): Richard C. Josiassen, Joshua Burke, Scott Siegert, Bill Aurora

SUMMARY:

Background: Tardive dyskinesia (TD) is a persistent movement disorder induced by chronic antipsychotic exposure, for which there are currently no FDA-approved treatments. Valbenazine (VBZ; NBI-98854) is a novel, highly selective vesicular monoamine transporter 2 inhibitor under investigation for use in TD and exhibited favorable safety in earlier studies. KINECT 2 (NCT01733121) was a dose-escalating trial evaluating safety and efficacy of VBZ for TD, demonstrating significant and clinically meaningful improvement versus placebo. This analysis evaluated

the psychiatric status of subjects across the trial. **Methods:** KINECT 2 was a prospective, randomized, double-blind, six-week, placebo-controlled trial in subjects with schizophrenia, mood disorder or gastrointestinal disorder with moderate or severe TD. VBZ or placebo (1:1) was administered once daily. All subjects randomized to VBZ received 25mg through week 2; then the dose was titrated to 50mg or maintained at 25mg. At week 4, the dose was titrated to 75mg, maintained or reduced to the previous dose. After week 6, subjects completed a two-week follow-up. The primary endpoint (previously reported) was week 6 change from baseline (CFB) in Abnormal Involuntary Movement Scale (AIMS) score versus placebo. AIMS videos were scored by two blinded central raters. Safety assessments were analyzed descriptively and included the following psychiatric scales: the Positive and Negative Syndrome Scale (PANSS), Young Mania Rating Scale (YMRS), Montgomery-Åsberg Depression Rating Scale (MADRS), Calgary Depression Scale for Schizophrenia (CDSS) and Columbia Suicide Severity Rating Scale (C-SSRS). **Results:** 102 subjects were randomized; 76% of VBZ subjects reached the maximum dose of 75mg. The safety population was 51 (VBZ) and 49 (placebo) subjects. Antipsychotics, antidepressants and anxiolytics were the most common concomitant medications, taken by 40% or more of subjects in each group. Week 6 CFB in AIMS score (primary endpoint) was significantly greater for VBZ versus placebo (p=0.0005). Psychiatric status measured by psychiatric rating scales remained stable or improved from baseline to week 6 for both groups, as shown by CFB in PANSS for positive symptoms (VBZ −0.6, placebo −1.0), negative symptoms (VBZ 0.5, placebo −0.9) and general psychopathology (VBZ −0.5, placebo −0.7); MADRS (VBZ −1.5, placebo −0.2); CDSS (VBZ −0.9, placebo −0.7); and YMRS (VBZ −1.1, placebo −0.3). The percentage of subjects with suicidal ideation/behavior as measured by the C-SSRS for VBZ versus placebo was 5.9% vs. 2.0% (screening) and 5.9% vs. 0% (weeks 2–8). **Conclusion:** There was no apparent increase in psychopathology, depression or suicidality with VBZ, and psychiatric status remained stable or improved in subjects with underlying schizophrenia, schizoaffective disorder, depression or bipolar disorder. Together with favorable efficacy findings, these results indicate that VBZ may be a promising therapy for TD.

NO. 72

A PROFILE OF RESPONDERS TO NEUROCOGNITIVE REMEDIATION IN SCHIZOPHRENIA

Lead Author: Jean-Pierre Lindenmayer, M.D.
Co-Author(s): Veronica Ozog, Samantha Fregenti, Isidora Ljuri, Abraham Goldring, Amod Thanju, Anzalee Khan

SUMMARY:
Background: Cognitive impairment is a well-known, prominent feature displayed by individuals with schizophrenia. Extensive research indicates that this impairment can be moderate to severe, predicting long-term levels of occupational, social and economic functioning. Deficits are seen in memory, attention and executive functions. One treatment shown to enhance cognition is cognitive remediation therapy (CRT), which is a behavioral intervention intended to systematically improve cognition in individuals who have suffered deterioration in neuropsychological functioning. Research on mostly higher-functioning outpatients has shown that CRT can be more effective with some patients as compared to others. The clinical features associated with improvements with CRT in more chronic and lower-functioning patients have not been clarified. This study addresses the issue of what factors (i.e., demographic, cognitive and psychopathological) are associated with cognitive improvement following CRT intervention in a sample of patients with predominantly chronic schizophrenia representing a broad spectrum of all levels of functioning and severity of illness. **Methods:** Predominantly inpatients with *DSM IV* schizophrenia or schizoaffective disorder were enrolled, after meeting inclusion and exclusion criteria, in a standardized CRT program (CogPack or Positscience). Following extensive baseline assessments, including the MCCB-MATRICS battery, patients engaged in approximately 24 hours of computer-based cognitive exercises that provided practice time in areas of attention and concentration, psychomotor speed, learning and memory, and executive functions. Participants also engaged in a one-hour CRT discussion group per week. Participants were regarded as improvers if they showed a 67% performance increase in the domains completed. **Results:** Of the 77 participants included for this preliminary analysis, 39% were classified as improvers. Improved patients compared to non-improved patients showed significant improvement in TMT (t=2.085, p=0.041), BVMT (t=5.190, p<0.001), MSCEIT (t=2.923, p=0.005), processing speed (t=2.179, p=0.033) and visual learning (t=2.290, p=0.025). There were no

significant differences in severity of illness between the two groups. **Conclusion:** Not all patients with longstanding psychotic illness and lower cognitive functioning showed improvement in all neurocognitive domains. Improvement was associated with improved speed of processing, working memory and social cognition. Therefore, performing identical CRT treatments with patients who have severe neurocognitive deficits may not be optimal, and attention should be focused on pretreatment predictors of response to CRT in order to allow for a more tailored approach to enhance improvement response. Results support the feasibility of CRT in patients with chronic schizophrenia.

NO. 73

ENCENICLINE IS NOT ASSOCIATED WITH SIGNALS OF ABUSE POTENTIAL IN RECREATIONAL DRUG USERS

Lead Author: Gordon R. Loewen, Ph.D.
Co-Author(s): Beatrice Setnik, Ph.D., Hans J. Moebius, M.D., Ph.D., Nancy Dgetluck, M.S., Nathan Buerstatte, M.P.H., Vincent H. C. Lam, M.D., Catherine Mills, M.Sc., Dana Hilt, M.D.

SUMMARY:

Background: Encenicline is an orthosteric α7 nicotinic acetylcholine receptor agonist in development for the treatment of cognitive impairment in schizophrenia and Alzheimer's disease. As some CNS-active agents are associated with abuse, this study assessed the abuse potential of encenicline in recreational drug users relative to a Schedule IV positive control (phentermine). **Methods:** Encenicline (1.8, 36 or 72mg free base), placebo (PBO), or phentermine HCl (45 or 90mg) were administrated to healthy recreational drug users during a double-blind, single-dose, six-way crossover study. Subjects had previously abused stimulants and were required to distinguish phentermine from PBO during a qualification period. Pharmacodynamic (PD) endpoints, including visual analog scales (VAS), Addiction Research Center Inventory (ARCI) subscales, a psychomotor test (digit symbol substitution test [DSST]), and plasma encenicline and metabolite concentrations were assessed before and up to 48 hours after dose. Treatment-emergent adverse events (TEAEs) and vital signs were collected throughout the study. PK parameters (peak concentrations [C_{max}] and area under the plasma concentration curve [AUC]) were determined using standard non-compartmental methods. PD parameters (maximum effect [E_{max}] and area under the effect curve [AUE]) in the PD population were compared across treatments using a mixed effects model. **Results:** 37 of the 42 (29 males; 13 females) randomized subjects completed the study. Withdrawals were due to AEs (n=2, vasovagal syncope/cardiac arrest during insertion of cannula for blood sampling 14 days after 1.8mg encenicline; ECG T-wave inversion one hour after 90mg phentermine HCl), withdrawal of consent (n=2) and noncompliance (n=1). Significant differences between phentermine 45 or 90mg versus PBO were observed for Drug Liking E_{max}, VAS and ARCI scales for E_{max} and AUE endpoints, validating that the study design had sufficient sensitivity to detect a drug abuse signal. No statistically significant differences were observed between encenicline doses versus PBO for VAS and ARCI endpoints, with the exception of Drug Liking E_{max} for 1.8mg encenicline (mean/median: 54.1/51.0 PBO vs. 57.0/51.0 encenicline 1.8mg, p=0.040) but not the higher encenicline doses. On the majority of PD endpoints, all encenicline doses were associated with a significantly lower abuse signal versus phentermine (45 or 90mg). Overall, encenicline's abuse potential more closely resembled PBO than phentermine. Encenicline was well tolerated; TEAEs potentially associated with abuse potential (e.g., euphoric mood, hypervigilance) were more commonly reported after phentermine than encenicline or PBO administration. **Conclusion:** Encenicline was essentially indistinguishable from PBO on PD endpoints by experienced recreational drug users in a study assessing the abuse liability of encenicline versus PBO and phentermine. Based on these results, encenicline has a low abuse potential.

NO. 74

THE ADHERENCE CHALLENGE IN SCHIZOPHRENIA: CAN MEDICAL EDUCATION IMPROVE PHYSICIANS' KNOWLEDGE OF MANAGEMENT OPTIONS?

Lead Author: Jovana Lubarda, Ph.D.
Co-Author(s): Piyali Chatterjee, B.A., Christoph U. Correll, M.D.

SUMMARY:

Background: Schizophrenia (SCZ) is a severe, chronic illness that affects about one percent of the world's population. Treatment requires careful tailoring of therapy and incorporation of multimodal strategies to promote adherence. However, as many as 50% of patients are nonadherent to medications, which can contribute to poorer outcomes. This study assessed if online continuing medical education (CME), an

interactive video discussion on adherence between two experts, can improve clinical knowledge/competence of psychiatrists and primary care physicians (PCPs) managing SCZ. **Methods:** A CME program on addressing nonadherence in SCZ and roles of current and emerging therapies was made available online through a website dedicated to lifelong learning. An online survey was used to assess the educational effect of the program by comparing the same participants' responses to four identical pre- and post-CME assessment questions. A paired two-tailed t-test was used to compare the mean pre- and post-assessment scores and assess improvement. McNemar's chi-squared statistic was used to determine statistical significance, and the effect of education was calculated using Cramer's V, which was used to determine the change in proportion of participants who answered questions correctly from pre- to post-assessment. Survey data were collected from September 23 to November 10, 2015. **Results:** Data were collected for 265 psychiatrists and 85 PCPs who participated in the CME activity and answered all pre- and post-assessment questions. Psychiatrists demonstrated statistically significant improvements in knowledge/competence (n=265, $p<0.05$, V=0.201, medium educational effect). While only 19% answered all four questions correctly on pre-assessment, 47% answered them all correctly on post-assessment. PCPs demonstrated statistically significant improvements in knowledge/competence (n=85, $p<0.05$, V=0.231, medium educational effect). While only four percent answered all four questions correctly on pre-assessment, 33% answered them all correctly on post-assessment. Both psychiatrists and PCPs improved their understanding of strategies to increase medication adherence, including available and emerging long-acting injectable antipsychotics' mechanisms of action (28% average improvement, $p<0.05$), how to tailor these agents in patients with SCZ (20% average improvement, $p<0.05$) and strategies for communicating with patients regarding long-acting medications (27% average improvement, $p<0.05$). **Conclusion:** Online CME presented as a video-based discussion between two experts in SCZ was successful in improving physician knowledge/competence on pharmacological and nonpharmacological strategies for increasing medication adherence in SCZ. Psychiatrists and PCPs would benefit from additional education on tailoring treatment options for SCZ patients, including the roles of long-acting and oral antipsychotics in improving adherence, in order to achieve improved patient outcomes.

NO. 75

MDD AND GAD: EFFECT OF CONTINUING MEDICAL EDUCATION ON PSYCHIATRISTS' KNOWLEDGE OF THE LATEST CLINICAL DATA

Lead Author: Jovana Lubarda, Ph.D.
Co-Author(s): Piyali Chatterjee, B.A.

SUMMARY:

Background: Each year, new data on major depressive disorder (MDD) and generalized anxiety disorder (GAD) are presented at major psychiatric conferences. However, busy clinicians are often unable to attend these meetings, which may lead to gaps in knowledge of recent clinical data and delay evidence-based management. This study assessed if online continuing medical education (CME) composed of short video summaries of the latest evidence updates from major psychiatry conferences in 2015 can improve the clinically-relevant knowledge of psychiatrists who manage patients with MDD and GAD. **Methods:** A CME program summarizing the latest updates in evidence for managing MDD and GAD from 2014 was made available online. An online survey was used to assess the educational effect of the program by comparing the same participants' responses to four identical pre- and post-CME assessment questions. A paired two-tailed t-test was used compare the mean pre- and post-assessment scores and assess improvement. McNemar's chi-squared statistic was used to determine statistical significance, and the effect of education was calculated using Cramer's V, which was used to determine the change in proportion of participants who answered questions correctly from pre- to post-assessment. Survey data were collected from August 10 to October 15, 2015. **Results:** Data were collected for 577 psychiatrists who participated in the CME activity and answered all pre- and post-assessment questions. Psychiatrists demonstrated statistically significant improvements in knowledge of the latest data on MDD and GAD (n=577, $p<0.05$, V=0.167, medium educational effect). While only 18% answered at least three out of four questions correctly on pre-assessment, this improved to 43% on post-assessment. Specific improvements were demonstrated following CME with regard to understanding the use of levomilnacipran extended release in patients with first-episode, recurrent and chronic MDD (15% improvement, $p<0.05$); mechanisms of action of

atypical antipsychotics such as cariprazine (12% improvement, p<0.05); use of vilazodone to improve all domains of function in GAD (12% improvement, p<0.05); and knowledge of clinical data on the use of quetiapine as an adjunctive treatment for patients with MDD (25% improvement, p<0.05). **Conclusion:** Online CME on the latest clinical data in MDD and GAD was effective in knowledge translation of clinically relevant therapeutic developments for psychiatrists. Similar video-based CME programs can be used to provide future updates on the latest evidence, which may benefit the clinical practice of psychiatrists treating MDD and GAD.

NO. 76

SEASONAL AFFECTIVE DISORDER AND VISUAL IMPAIRMENT: ASSOCIATION TO EYE DIAGNOSES

Lead Author: Helle Madsen, M.D.
Co-Author(s): Henrik Dam, M.D., Ph.D., Ida Hageman, M.D., Ph.D.

SUMMARY:

Background: Light is important in pathogenesis and treatment of seasonal affective disorder (SAD). The prevalence of SAD is significantly increased among persons with severe visual impairment (17 %) compared to persons with full sight (8%). Moreover, the conscious perception of light is of significance. Persons with severe visual impairment and maintained light perception have a threefold increase in odds for SAD, whereas persons with no conscious light perception have a doubling of odds compared to normally sighted controls. Light input to the retina and in particular to the melanopsin-containing intrinsically photosensitive retinal ganglion cells (ipRGCs) affects circadian homeostasis and thus both directly and indirectly influences mood and behavioral regulation. Eye diseases differentially destroy eye structures and the ipRGCs, which may lead to varying susceptibility for seasonal discomfort according to specific eye diagnoses. **Methods:** In our recently published study, 1,647 persons with severe visual impairment or blindness were screened for SAD symptoms with the Seasonal Pattern Assessment Questionnaire. Questionnaire data of seasonal oscillations in mood, sleep length, appetite, body weight, energy levels and social activity levels will be linked to patient-specific eye diagnoses recorded in the National Danish Register of Patients. Eye diagnoses will be categorized according to type and anatomical localization in order to assess whether lesions of a specific type or region are associated with increased seasonality. **Results:** Data analysis is in process, and results will be presented at the meeting. **Conclusion:** Current expansions in the neurobiological field of circadian and sleep homeostatic factors bring new insights to the area of affective disorders.

NO. 77

A NOVEL SYMPTOM ASSESSMENT TOOL FOR POTENTIAL ADVERSE EFFECTS

Lead Author: Rajnish Mago, M.D.
Co-Author(s): Kelly Huhn, B.S., Michelle Shwarz, Ph.D.

SUMMARY:

Background: Methods to evaluate adverse effects (AEs) are significantly underdeveloped compared to methods to evaluate efficacy. A basic standardized approach to the assessment of AEs is long overdue. We explored use of the Symptom Assessment Tool (SAT) as an Internet-based, patient-rated tool to systematically screen patients for symptoms and to identify which symptoms are “possibly” or “probably” AEs. **Methods:** Adult outpatients were recruited before either being started on a psychotropic medication or increasing its dose. The SAT was completed at baseline and two weeks later. Open-ended questions about AEs were answered at the second visit. The SAT assessed causality for each symptom based on whether the symptom started/got worse when the dose was increased or the patient got sick or started another medication; whether the symptom improved when dose was decreased or medication was missed; whether the same symptom occurred in the past with a medication of the same class; and whether there was a nonmedication reason that could explain the symptom. A psychiatrist then assessed symptoms in detail and rated them as “unlikely,” “possible” or “probable” AEs were based on global clinical judgment (primary analysis) or score on the Adverse Drug Reaction Probability Scale (ADRPS). **Results:** 913 symptoms identified by 61 patients were assessed. Only 5.5% were considered by the psychiatrist to be “probable AEs” and another 12.5% to be “possible AEs." Most importantly given the purpose of the SAT, the tool ruled out 323 symptoms as “unlikely AEs,” correctly for 85.8% of these (negative predictive value). Of 164 symptoms considered to be “possible” or “probable” AEs by the psychiatrist, the SAT correctly identified 118 (sensitivity=72.0%). Sensitivity of the SAT was higher (79.1%) for identifying as potential AEs those symptoms that psychiatrist identified as “probable AEs." When compared against the ADRPS, the SAT

had a negative predictive value of 69.3% and sensitivity of 66.6%. During open-ended questioning, patients only reported 7.9% of the symptoms they identified on the SAT tool. Open-ended questioning identified only a median of one AE (range=0–6), even after three prompts. It identified only 26.8% of AEs identified by the psychiatrist. However, of "side effects" identified on open-ended questioning, 61.1% were considered by the psychiatrist to be AEs (moderate positive predictive value). **Conclusion:** The majority of symptoms identified by patients are unlikely to be AEs. Open-ended questioning fails to identify most AEs. The SAT should be further evaluated as a potential tool to improve identification and assessment of AEs in clinical trials. It could both systematically identify AEs and rule out many symptoms, making it feasible for physicians to assess and follow up on the rest. This research was supported in part by a NARSAD Young Investigator grant to Dr. Mago.

NO. 78

UTILIZING PERMANENT MAGNETS TO GUIDE THE DIFFUSION OF MAGNETIC NANOPARTICLE IN BRAIN TISSUES OR AGAROSE GEL SIMULATING THESE TISSUES IS CHALLENGING

Lead Author: Partam Manalai, M.D.
Co-Author(s): Mohammad A. Gairatmal, M.D., Ajmal H. Azizi, M.D., Najeeb U. R. Rahman Manalai, M.D., Mohammad Azam, M.D.

SUMMARY:

Background: In spite of progress in development of medications to treat psychiatric disorders, adherence to psychotropic medications is low in patients with these illnesses. One of the major reasons for treatment discontinuation is system side effects associated with psychotropic medications. Reducing the systemic side effects would require delivering psychotropic agents directly to the brain, ideally to a specific target in the central nervous system (CNS), which is complicated due in part to presence of the blood brain barrier (BBB). Thus, the nose and olfactory system provides a unique window of opportunity in targeted drug delivery to CNS. Theoretically, it is possible to deliver psychotropic medications directly to the brain using magnetic nanoparticles containing these drugs. Using permanent magnets and magnetic nanoparticles, we evaluate the feasibility of guided diffusion of magnetic nanoparticles in the brain and validation of the guided diffusion of magnetic nanoparticles using different imaging technologies. **Methods:** using N48 neodynium magnets of different strengths, we attempted to move nano-screenMAG-ARA (150nm) nanoparticles in different media: water, oil, various viscosities of agrose gels (0.05–5%), spinal cord tissue, brain tissue and mouse skull. The Xenogen IVIS 200 imaging system and nine-tesla MRI were used for imaging. **Results:** Due to congregation, the advertised 150nm diameter was not validated using Zetasizer®. With sonication, the size of the nanoparticles was reduced to 230nm. At a 0.025% solution of these sonicated nanoparticles, the movement of the nanoparticles was overtly observed in water, oil and low-viscosity (0.05%) agarose gel but not in higher concentration of the gel or spinal cord or brain tissue using the Xenogen IVIS 200 imaging system. When particles were injected in rat nose and a permanent magnet placed on the fontal cortex, the movement of these magnetic nanoparticles was seen to the eyes but not to the brain. Using nine-tesla MRI imaging, image distortion after injecting nanoparticles and applying the magnet was not detected. **Discussion:** In low-viscosity fluids, the movements of magnetic nanoparticles can be visualized within seconds of applying the permanent magnet. However, in tissue, the guided diffusion seems improbable. Even though magnetic nanoparticles theoretically appear appealing as a vehicle to deliver drugs to CNS from the nasal cavity, this approach faces significant challenges. Further studies are needed to find the exact mechanism of this challenge.

NO. 79

TOTAL PANSS CORRELATED WITH INTERFERON GAMMA AND INTERLEUKIN-1 BETA IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Gurtej S. Mann, M.D.
Co-Author(s): Ruchir Patel, Ramandeep S. Kahlon, Satyajit Mohite, Titilayo Makanjuola, Sumana Goddu, Osarhiemen Aimienwanu, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:

Background: Plasma levels of inflammatory markers have previously been shown to be elevated in patients with schizophrenia in comparison with healthy controls. Inflammatory markers have also been associated with symptom severity in patients with schizophrenia. Previous studies have shown the correlation of inflammatory cytokines with psychotic severity. We aimed to replicate these previous findings by comparing levels of plasma inflammatory

cytokines in a sample of patients with schizophrenia and healthy controls and also evaluated the correlation of psychotic symptom severity with plasma cytokines in these patients. **Methods:** We recruited 10 adult patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) and 10 healthy controls matched for age, gender and race. Psychotic symptom severity in patients was assessed with the Positive and Negative Syndrome Scale (PANSS). We used ELISA to measure fasting plasma interferon gamma (IFN-Î³), interleukin 1 beta (IL-1β), interleukin 6 (IL-6) and tumor necrosis factor alpha (TNF-α) in patients and controls. Cytokine levels did not have a normal distribution, and we therefore log-transformed the cytokine levels. We used t-tests to compare log-transformed cytokine levels between patients and controls. In patients, we calculated Pearson correlation coefficients between PANSS scores and log-transformed plasma cytokines. **Results:** Cytokine levels did not differ between patients and controls. However, in patients, total PANSS correlated with IFN-Î³ (r=0.689, p=0.028) and IL-1β (r=0.686, p=0.029). **Conclusion:** These results support the evaluation of inflammatory cytokines as potential biomarkers of symptom severity in schizophrenia as well as the potential use of interventions targeting inflammation in the treatment of psychotic symptoms.

NO. 80

INCREASED LEVELS OF OXYTOCIN IN ADULT OCD PATIENTS

Lead Author: Donatella Marazziti, M.D.
Co-Author(s): Federico Mucci, M.D., Stefano Baroni, Armandi Piccinni, M.D.

SUMMARY:

Background: The current model of the pathophysiology of obsessive-compulsive disorder (OCD) is complex and mainly centered on the serotonin (5-HT) system that has led to the use of the selective 5-HT reuptake inhibitors (SSRIs) in this condition. However, since 30% of OCD patients do not respond to the SSRI treatment, other pharmacological targets have been identified, in particular the dopamine and glutamate systems. Further, scattered findings suggest that the neuropeptide oxytocin (OT) might also be involved in the pathophysiology of OCD, both per se and given its interactions with the 5-HT system. **Objective:** Given the paucity of information, this study evaluated plasma OT levels in a group of 44 untreated OCD outpatients, as compared to a similar group of healthy control subjects. At the same time, the relationships between OT and clinical features and romantic attachment characteristics were examined as well. **Methods:** Diagnosis was assessed according to *DSM-IV-TR* criteria, while OCD severity was measured by means of the Yale-Brown Obsessive Compulsive Scale (Y-BOCS). All patients were drug-free and not depressed. Romantic attachment was assessed by means of the Italian version of the Experiences in Close Relationships Questionnaire. Plasma OT levels were evaluated by means of a standard RIA kit. **Results:** The main findings of our study showed that OT levels were increased in OCD patients, as compared with healthy subjects, and negatively related to symptom severity. Positive relationships were detected between OT levels and the fearful-avoidant and dismissing styles of romantic attachments, but only in male OCD patients. **Conclusion:** Taken together, these findings suggest that OT may play a role in OCD pathophysiology and also in romantic attachment of patients with gender specificity.

NO. 81

EFFICACY OF CARIPRAZINE ON PREDOMINANT NEGATIVE SYMPTOMS OF PATIENTS WITH SCHIZOPHRENIA: POST HOC ANALYSIS OF PANSS DATA, MARDER FACTORS AND COGNITION

Lead Author: Stephen R. Marder, M.D.
Co-Author(s): István Laszlovszky, Ph.D., Pharm.D., Erzsébet Szalai, M.D., Balázs Szatmári, M.D., Judit Harsányi, M.D., Ã gota Barabássy, M.D., Marc Debelle, M.D., Suresh Durgam, M.D., István Bitter, M.D., György Németh, M.D.

SUMMARY:

Background: Schizophrenia is a complex disorder with positive, negative and mood symptoms, as well as cognitive impairment. Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors, FDA-approved for the treatment of schizophrenia and bipolar mania. Twenty-six-week cariprazine treatment was significantly more effective on negative symptoms and functioning than risperidone in patients with predominant negative symptoms of schizophrenia. Primary and post hoc analyses of Positive and Negative Syndrome Scale (PANSS) data from this phase 3 study were evaluated. **Methods:** Subjects with schizophrenia, a PANSS factor score for negative symptoms (PANSS-FSNS) of at least 24 and no pseudospecific factors (e.g., extrapyramidal and

depressive symptoms) were randomized to cariprazine 4.5mg/day (dose range: 3–6mg/day) or risperidone 4mg/day (dose range: 3–6mg/day) for 26 weeks. The primary efficacy parameter was change from baseline (CfB) to endpoint in PANSS-FSNS. The secondary efficacy parameter, functional improvement, was defined as CfB to endpoint in Personal and Social Performance Scale (PSP). An additional efficacy parameter was CfB to endpoint in PANSS factor score for positive symptoms (PANSS-FSPS). Post hoc analyses evaluated efficacy on PANSS single items and the additional PANSS-derived Marder factors (disorganized thought, uncontrolled hostility/excitement, anxiety/depression). Further analysis was carried out on a PANSS-based cognitive subscale. Results: 461 patients were randomized 1:1 to double-blind risperidone (n=231) or cariprazine (n=230) treatment. CfB at week 26 in the PANSS-FSNS was significantly larger in the cariprazine group compared to risperidone (LSMD=−1.46, p=0.002). CfB at week 26 in the PSP total score showed similarly greater significant improvement with cariprazine than risperidone (LSMD=4.63, p<0.001). The PSP subdomains of self-care, socially useful activities, and personal and social relationships all showed statistical superiority in favor of cariprazine. PANSS-FSPS score was low at baseline and kept stable and similar between the treatment groups. The PANSS Marder factor for disorganized thought at week 26 was on the level of significance (LSMD=−0.63, p=0.05) and also favored cariprazine. Change in the anxiety/depression and uncontrolled hostility/excitement factors were not statistically significant between the two groups. The PANSS-based modified cognitive subscale (P2, N5, N7, G10 and G11) showed significant improvement at week 26 (LSMD=−0.53, p=0.028), favoring cariprazine. **Conclusion:** Twenty-six-week cariprazine monotherapy treatment was significantly superior to risperidone on negative symptoms and functioning in patients with predominant negative symptoms of schizophrenia. Cariprazine showed superiority in cognitive improvement versus risperidone. This study was funded by Gedeon Richter Plc.

NO. 82

KINECT 3: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED PHASE 3 TRIAL OF VALBENAZINE (NBI-98854) FOR TARDIVE DYSKINESIA

Lead Author: Stephen R. Marder, M.D.
Co-Author(s): Mary Ann Knesevich, Robert A. Hauser, Grace S. Liang, Christopher F. O'Brien

SUMMARY:
Background: Tardive dyskinesia (TD) is a persistent and often disabling movement disorder resulting from chronic antipsychotic exposure. There are currently no FDA-approved treatments for TD. Valbenazine (VBZ), a novel, highly selective vesicular monoamine transporter 2 (VMAT2) inhibitor, is designated an FDA breakthrough investigational therapy. VBZ demonstrated favorable efficacy and safety profiles in phase 1 and 2 studies. The efficacy, safety and tolerability of VBZ for TD were evaluated in a phase 3 trial (KINECT 3, NCT02274558). **Methods:** KINECT 3 was a double-blind, parallel-group, six-week, placebo-controlled trial of subjects with moderate or severe antipsychotic-induced TD and underlying schizophrenia, schizoaffective disorder or mood disorder. Subjects were randomized 1:1:1 to placebo, VBZ 40mg or VBZ 80mg taken once daily. The primary outcome was an intent-to-treat (ITT) analysis of change from baseline on the Abnormal Involuntary Movement Scale (AIMS) score, assessed by blinded central video raters, for the VBZ 80mg dose versus placebo. Safety assessments included adverse event (AE) rates, laboratory, ECG and psychiatric assessments including the Positive and Negative Syndrome Scale (PANSS), Young Mania Rating Scale (YMRS), Montgomery-Åsberg Depression Rating Scale (MADRS), Calgary Depression Scale for Schizophrenia (CDSS) and Columbia Suicide Severity Rating Scale (C-SSRS). **Results:** Sixty-four sites randomized 234 subjects. Sixty-six percent of subjects had schizophrenia or schizoaffective disorder, and 86% were receiving concomitant antipsychotic medications (16% typical, 77% atypical). The mean baseline AIMS score was 10.1 (SD=4.0). VBZ 80mg resulted in a significant improvement in AIMS score versus placebo (LS mean change from baseline=−3.2 vs. −0.1, p<0.0001). The AIMS score was also reduced in the VBZ 40mg group versus placebo (LS mean change from baseline=−1.9 vs. −0.1, p=0.0021; full description of supportive analyses to be presented). AE rates were similar among all groups and were consistent with prior studies; the most commonly reported AE was somnolence (VBZ 80mg: 5%, VBZ 40mg: 4%, placebo: 4%). Three percent of subjects discontinued due to treatment-emergent AEs (VBZ 80mg: 4%, VBZ 40mg: 3%, placebo: 3%). Across multiple scales (PANSS, YMRS, MADRS, CDSS, C-SSRS), results were generally similar between VBZ and placebo, and psychiatric status was stable. **Conclusion:** Once-daily VBZ was associated with a

significant improvement in TD and was generally well tolerated in subjects with underlying schizophrenia, schizoaffective disorder or mood disorder (e.g., bipolar disorder and major depressive disorder). Both VBZ doses were generally well tolerated, even when taken with a wide range of concomitant medications, including antipsychotic agents. Psychiatric scales indicated no apparent increased risk in psychiatric symptoms, depression or suicidality with VBZ during the trial. VBZ may be a promising therapy for TD.

NO. 83

RISK FACTORS FOR NEW-ONSET MAJOR DEPRESSIVE DISORDER AND DYSTHYMIA: RESULTS FROM THE LONGITUDINAL FINNISH HEALTH 2011 SURVEY

Lead Author: Niina Markkula, M.D., M.Sc.
Co-Author(s): Jaana Suvisaari, M.D., Ph.D., Samuli Saarni, M.D., Ph.D., Tarja Nieminen, M.D., Ph.D., Seppo Koskinen, M.D., Ph.D.

SUMMARY:
Background: Knowledge of risk factors of new-onset depression is necessary to understand the etiology of depressive disorders and to target preventive interventions to populations at higher risk. **Objective:** This study examines predictors of new-onset depressive disorders (major depressive disorder [MDD] and dysthymia) in an 11-year follow-up of a general population sample with no previous history of depression. We evaluate the impact of sociodemographic characteristics, childhood adversity, somatic and mental health, and social capital on the risk of developing a depressive disorder. **Methods:** A nationally representative sample of Finns aged 30 and over (n=8,028 at baseline) (BRIF8901, www.terveys2011.info) was followed-up for 11 years. Persons with depressive disorders at baseline were excluded from the analyses. Depressive disorders were diagnosed with the Composite International Diagnostic Interview (M-CIDI). Register information on hospitalizations due to depressive disorders was utilized to account for missing data. Information on anxiety and alcohol use disorders, somatic health, childhood adversities, and social capital was also collected at baseline. **Results:** 130 individuals were diagnosed with new-onset depressive disorders at follow-up in 2011. In the final adjusted model, predictors of new-onset depressive disorders were younger age (OR=0.97, 95% CI [95, 99] for each year of age), childhood adversities (OR=1.77, 95% CI [1.14, 2.74]), low trust axis of social capital (OR=0.60, 95%CI [0.38, 0.96] for high trust), anxiety disorder (OR=2.71, 95%CI [1.31, 5.61]) and baseline depressive symptoms (OR=1.57, 95% CI [1.00, 2.44] for moderate and OR=2.25, 95% CI [1.11, 4.57] for severe depressive symptoms). The predictors were different for MDD and dysthymia. Risk factors for MDD were younger age (OR=0.97, 95% CI [0.95, 0.99] for each additional year of age), baseline anxiety disorder (OR=2.52, 95% CI [1.14, 5.59]) and depressive symptoms (OR=2.74, 95% CI [1.32, 5.68] for severe depressive symptoms), whereas risk factors for dysthymia were younger age (OR=0.94, 95% CI [0.90, 0.99]), childhood adversity (OR=2.92, 95% CI [1.10, 7.79]), low trust axis of social capital (OR=0.30, 95% CI [0.09, 0.95] for high trust) and having one to two somatic diseases (OR=3.12, 95% CI [1.15, 8.4]). **Discussion:** Younger age, childhood adversity, low social capital and anxiety disorders are risk factors for new-onset depressive disorders. Income, education, parental mental disorder and alcohol use disorders did not predict onset of depression in this study. Different factors predict MDD and dysthymia. **Conclusion:** This is, to our knowledge, the first study that compares risk factors for MDD and dysthymia. Childhood adversity and low social capital were strongly associated with onset of dysthymia, but not with MDD. The impact of interventions aimed at improving childhood conditions on incidence of depressive disorders should be studied further.

NO. 84

CHILDHOOD TRAUMA IN BIPOLAR PATIENTS AND THEIR ROMANTIC PARTNERS

Lead Author: MegAnn Kay McGinnis, B.S.
Co-Author(s): M. Hawes, B.A., J. Cohen, B.A., D. McClure, B.A., Z. Yaseen, M.D., I. Galynker, M.D., Ph.D.

SUMMARY:
Background: Research shows that healthy couples where both partners have a history of childhood trauma tend to perceive each other more negatively than couples without childhood trauma. This relationship has not been explored in psychiatric populations. Bipolar patients have been shown to have a high incidence of childhood trauma. In this context, we have examined if childhood trauma in bipolar patients is associated with childhood trauma in their romantic partners. **Methods:** Thirty patients seeking treatment at the Richard and Cynthia Zirinsky Center for Bipolar Disorder at Mount Sinai Beth Israel were recruited as part of a larger study of

family-inclusive bipolar treatment. Childhood trauma was assessed in both patients and their romantic partners with the Childhood Trauma Questionnaire (CTQ). Patients' and their partners' scores on all five CTQ subscales were correlated to examine possible associations in partner selection. **Results:** Patient sexual abuse correlated significantly with their partner's reported emotional abuse (r=0.457, p=0.011), sexual abuse (r=0.546, p=0.002), emotional neglect (r=0.504, p=0.007) and physical neglect (r=0.377, p=0.044). Sexual abuse reported by significant others showed a positive correlation with patients' reported emotional abuse (r=0.411 p=0.024) and emotional neglect (r=0.512, p=0.006). Additionally, patient childhood physical abuse correlated with their partner's emotional neglect (r=0.381, p=0.05). These relationships were not explained by depressive symptoms in either group. **Discussion:** Our analysis showed that patient childhood trauma is significantly correlated with childhood trauma in patients' romantic partners. Future research needs to examine clinical implications of this association, including its impact on patients' and partners' perceptions of each other and the quality of the relationship.

NO. 85

EFFICACY OF VORTIOXETINE ON COGNITIVE FUNCTION IN WORKING SUBJECTS WITH MAJOR DEPRESSIVE DISORDER

Poster Presenter:Raymond Lam, M.D.
Lead Author: Roger S. McIntyre, M.D.
Co-Author(s): Ioana Florea, M.D., Brigitte Tonnoir, Pharm.D., Henrik Loft, Ph.D., M.Sc., Michael C. Christensen, Dr.P.H., M.P.A., M.Sc.

SUMMARY:

Background: Vortioxetine is an antidepressant with a multimodal mechanism of action and has demonstrated positive effects on cognitive functioning in patients with major depressive disorder (MDD). Many MDD patients are working, and even a small degree of cognitive dysfunction can cause substantial disability. This study examined the effect of vortioxetine (5–20mg/day) in working patients with MDD on measures of cognitive functioning and depressive symptoms using post hoc secondary analysis of data from the FOCUS trial (NCT01422213). **Methods:** Patients with MDD (n=602) were randomized 1:1:1 to treatment with vortioxetine 10 or 20mg or placebo for eight weeks. Digit Symbol Substitution Test (DSST), Rey Auditory Verbal Learning Test (RALVT), Trail Making Test A/B (TMT-A/B), Stroop (congruent/incongruent), as well as the computerized tests Simple Reaction Time task (SRT) and Choice Reaction Time task (CRT), were applied to objectively assess the cognitive performance of the patients. The effect on cognitive functioning as perceived by the patients was assessed by the Perceived Deficits Questionnaire (PDQ). Effect on depressive symptoms as assessed by Montgomery-Åsberg Depression Rating Scale (MADRS) total score was measured as a sensitivity analysis using data from three additional short-term placebo-controlled studies and one relapse prevention study. Analyses were made for individuals in the full analysis set who were working/taking classes. Additionally, outcomes as a function of workplace position were analyzed. Duloxetine was included in two of the three additional short-term placebo-controlled studies. All analyses were done versus placebo. Results: In the FOCUS study, there was a larger effect on DSST number of correct symbols for 10 (5.6, p<0.001) and 20mg (5.0, p<0.001) in working patients (about 60% of the study population) compared to the overall study population (4.0, p<0.001, both groups). The larger treatment effect in working patients remained after adjusting for change in MADRS total score. The effect on DSST was greatest in patients with a managerial position for 10 (9.18, p=0.006) and 20mg (9.02 p=0.001). A larger treatment effect in working patients relative to the overall study population was also observed for TMT-A/B, Stroop and PDQ. A trend toward a greater effect on the MADRS total score was also observed in working patients with vortioxetine, but not with duloxetine, in the sensitivity analysis. **Conclusion:** These results indicate that the beneficial effects of vortioxetine on objective and subjective measures of cognitive function are greater in adults with MDD who are currently working and/or engaged in educational pursuits. Overall depressive symptom reduction was greater in working individuals. The observed benefits on cognitive functioning were independent of the improvement in depressive symptoms. A greater symptom reduction was not observed for duloxetine in working patients.

NO. 86

DIRECT AND INDIRECT EFFECTS OF LEVOMILNACIPRAN ER ON FUNCTIONAL IMPAIRMENTS IN MDD PATIENTS WITH COGNITIVE DIFFICULTIES: POST HOC PATH ANALYSES

Lead Author: Roger S. McIntyre, M.D.

Co-Author(s): Philip D. Harvey, Ph.D., Carl Gommoll, M.S., Changzheng Chen, Ph.D., Kenneth Kramer, Ph.D., Keith Wesnes, Ph.D.

SUMMARY:

Background: Patients with major depressive disorder (MDD) often have cognitive difficulties that can adversely affect psychosocial functioning. In clinical trials, treatment with levomilnacipran extended-release (LVM-ER) significantly reduced functional impairment relative to placebo in adults with MDD. Using data from a phase 3 trial (NCT01034462) that included the Cognitive Drug Research (CDR) computerized battery of tests as an efficacy measure, path analyses were conducted post hoc to explore the direct and indirect effects of LVM-ER on functional outcomes in patients with cognitive impairments. **Methods:** Path models were constructed using regression analyses of data from LVM-ER-treated patients. All models included LVM-ER as the fixed effect and change from baseline in Sheehan Disability Scale (SDS) total score as the functional impairment outcome. Analyses were conducted in the intent to treat (ITT) population and in subgroups with cognitive impairment that were defined using baseline median CDR scores for Power of Attention (POA, score≥1,303) and Continuity of Attention (COA, score<92). The first set of path analyses included changes from baseline in Montgomery-Åsberg Depression Rating Scale (MADRS) total score and POA score as mediating factors. The second set included MADRS total and COA score changes as mediating factors. **Results:** In the first set of analyses, direct effects of LVM-ER on SDS total score were as follows: ITT, 3.4%; POA≥1,303, 19.2%; COA<92, 0.3%. The indirect effects of LVM-ER on SDS total score were more strongly mediated through changes in MADRS total score (ITT, 24.9%; POA≥1,303, 25.5%; COA<92, 10.3%) than POA score (ITT, 2.5%; POA≥1,303, 0.3%; COA<92, 6.9%). In the second set of analyses, direct effects of LVM-ER on SDS total score were as follows: ITT, 30.7%, POA≥1,303, 21.8%; COA<92, 0.3%. Again, the indirect effects of LVM-ER on SDS total score were more strongly mediated through improvements in MADRS total score (ITT, 32.4%; POA≥1,303, 46.7%; COA<92, 7.7%) than COA score (ITT, 0.2%; POA≥1,303, 0.3%; COA<92, 4.4%). **Conclusion:** Path analyses of data from a phase 3 trial showed LVM-ER to have some direct effects on functional impairment in adults with MDD, particularly in those with a reduced ability to temporarily focus attention (POA≥1,303 subgroup). The indirect effects of LVM-ER on SDS total score through MADRS total score was much larger than the indirect effects through POA or COA scores. These results may have been due to the SDS and MADRS being based on patient reports, whereas the POA and COA were objective measures of attention. Future research using more objective measures of disability (e.g., performance-based measures) is warranted to evaluate the relationship between CDR score changes and improvements in patient functioning. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate.

NO. 87

DIABETES IN THE WORKPLACE: THE MODERATIONAL ROLE OF DEPRESSIVE SYMPTOMS ON COGNITION AND WORK PERFORMANCE

Poster Presenter:Yena Lee

Lead Author: Roger S. McIntyre, M.D.

SUMMARY:

Background: Diabetes mellitus (DM) has consistently been associated with adverse health outcomes, poor psychosocial functioning and reduced workplace performance. The principle mechanism mediating workplace impairment in DM is cognitive dysfunction. It is also observed that adults with major depressive disorder (MDD) exhibit deficits across multiple domains. The overlap between DM and MDD is common and highly associated with adverse health outcomes for both conditions. This study determined the effect of concurrent DM and MDD on workplace functioning in Canada through a cross-sectional study in the Canadian workplace, identifying individuals on the basis of having pre-DM and depressive symptoms. **Objective:** Determine the extent to which workplace functioning in the Canadian workplace for adults with pre-DM is moderated by the presence of depressive symptomatology. The coprimary hypotheses were that pre-DM would adversely affect measures of workplace performance and depressive symptoms would significantly worsen measures of cognitive function and workplace performance, as well as increase risk for metabolic comorbidities (e.g., cardiovascular disease). **Methods:** Pre-DM subjects (n=1,100) were recruited from private workplace settings across Canada. Eligible subjects were at moderate to high risk for DM, according to the Canadian Diabetes Risk Questionnaire (CANRISK) and as indicated by HbA1c levels of at least 5.5%. All individuals were assessed with measures of work performance (Endicott Work Productivity Scale

[EWPS]), quality of life (WHO 5-Item Well-Being Index [WHO-5]), cognitive function (5-Item Perceived Deficits Questionnaire [PDQ-5]), and depressive (9-Item Patient Health Questionnaire [PHQ-9]) and anxiety symptoms (7-Item Generalized Anxiety Disorder Scale [GAD-7]). Data will be obtained at baseline for all subjects. **Results:** Last subject last visit will be obtained by March 2016 (enrolment as of December 9, 2015 was approximately 600). All data are being collected and maintained digitally, providing opportunity for immediate quality control and analysis. Results from the first cross-national study investigating the additive/synergistic effects of DM and MDD on functioning in the Canadian workforce within a large, representative, private employment setting will be presented. **Conclusion:** We hypothesize that the presence of depressive symptoms adversely moderates workplace performance among adults with pre-DM in the Canadian workplace. We conjecture that deficits in cognitive function are amplified in adults with both DM and MDD, manifesting as impairments in general functioning and work performance. Results from our study have important conceptual relevance (e.g., implications of pre-DM and MDD on cognitive neural structures) and clinical relevance (e.g., the importance of screening for, preventing and treating MDD in adults with chronic medical illnesses such as DM).

NO. 88

ARE SEROTONIN REUPTAKE INHIBITORS ASSOCIATED WITH INCREASED RISK OF BLEEDING IN KNEE AND HIP SURGERIES? A CASE-CONTROL STUDY

Lead Author: Andrea Mendiola, M.D.
Co-Author(s): Hiren Umrania, M.D., Joseph Carmody, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Serotonin reuptake inhibitors (SRIs) are commonly prescribed to treat major depression, anxiety and other psychiatric disorders in patients. SRIs are being increasingly reported to be associated with bleeding complications in patients undergoing invasive procedures, resulting from inhibition of serotonin reuptake by platelets and impaired platelet aggregation. There are multiple studies showing that SRIs are associated with abnormal gastrointestinal bleeding, but there is little literature on its risk in surgical procedures. In medical practice, SRIs are not commonly discontinued before surgery; however, there are no clear guidelines regarding exposure to SRIs or adequate information about its risks during major surgeries. **Objective:** Assess if there is an increased risk of bleeding in major orthopedics procedures in patients receiving SRIs and determine if there is any difference in the outcomes of different patient populations in the study. **Methods:** In this retrospective case-control study, charts of adult patients who underwent total knee and/or hip replacement surgery at our medical center from January 2011 to December 2015 will be reviewed. A total of 190 subjects will be selected at random via the hospital's computerized database by using procedure codes for orthopedic operations. A control group (non-SRI group) will be matched with the experimental group (SRI group) by age, sex, ethnicity and type of surgery. Patients with abnormal laboratory tests before the surgery or with a primary bleeding or blood disorder and those with medical conditions associated with increased bleeding as well as those taking medications associated with increased bleeding will be excluded. Estimated blood loss will be obtained from the anesthesia reports. Data on other indicators of blood loss such as lab data on hemoglobin, hematocrit, platelets, prothrombin time (PT), partial-prothrombin time (PTT) and international normalized ratio (INR) from preoperative to postoperative days 1, 2 and 3 will be collected. Statistical analyses will be performed using standard statistical software with significance set for $p \leq 0.05$. **Conclusion:** The results from this study will have direct impact on clinical practice for both surgeons and psychiatrists. This study will help make evidence-based decisions regarding the continued use of SRIs when psychiatry patients undergo major surgical procedures.

NO. 89

META-ANALYSIS OF EFFICACY OF PREGABALIN IN THE TREATMENT OF ANXIETY DISORDERS

Poster Presenter:Ayesha Ashai, M.D.
Lead Author: Julia Merti, M.D.

SUMMARY:

Pharmacological treatment for anxiety disorders typically involves a combination of selective serotonin reuptake inhibitors (SSRIs) or selective norepinephrine reuptake inhibitors (SNRIs) with or without adjunctive benzodiazepines. In patients who cannot take these medications, perhaps due to intolerable side effects or substance abuse concerns with benzodiazepines, limited options are available. Based on several clinical trials showing promising

results, pregabalin (Lyrica) has been approved in the European Union for the treatment of generalized anxiety disorder (GAD) in adults. However, pregabalin for anxiety has not been widely utilized in the United States. Several randomized clinical trials over the past 10 years have compared pregabalin to both placebo and other medications, including benzodiazepines and venlafaxine, in the treatment of anxiety disorders, including GAD and social anxiety disorder. This meta-analysis will combine data from nine randomized controlled trials to determine the effect size of pregabalin in the treatment of anxiety disorders. Pregabalin may offer another valuable treatment option for anxiety disorders that is not typically considered in clinical practice in the United States.

NO. 90

PLASMA L-SELECTIN IS REDUCED IN PATIENTS WITH SCHIZOPHRENIA VERSUS HEALTHY CONTROLS

Poster Presenter:Pooja A. Amin, M.D.
Lead Author: Satyajit Mohite, M.D., M.P.H.
Co-Author(s): Giovana Zunta-Soares, Gabriela D. Colpo, Laura Stertz, Ajaykumar N. Sharma, Gabriel R. Fries, Consuelo Walss-Bass, Jair C. Soares, Olaoluwa O. Okusaga

SUMMARY:

Background: Schizophrenia has been associated with inflammation and abnormal immune responses. Lymphocyte migration to the site of inflammation plays an important role in immune function and involves adhesion molecules of the selectin family (P-, E- and L-selectins). Elevated selectin levels have been reported in numerous autoimmune and inflammatory conditions as well as in unmedicated patients with schizophrenia. This study compares plasma P-, E- and L-selectins in schizophrenic patients and healthy controls. **Methods:** We measured fasting plasma P-, E- and L-selectin (by ELISA) in 39 patients with schizophrenia (diagnosed with the Mini International Neuropsychiatric Interview version 5) and 19 healthy controls. All patients were receiving treatment with antipsychotics. The distribution of the selectins was skewed to the right, and we therefore applied a logarithmic transformation for the values in each participant. Unadjusted comparison was done with t-tests, and adjusted comparison was done with multiple linear regression. **Results:** Geometric mean L-selectin level was significantly lower in patients compared to controls (606.65±1.54 vs. 937.57±1.38, $p<0.001$). This association remained significant after adjusting for age, gender and race ($\beta=0.65$, CI [0.49, 0.85], $p=0.003$). P- and E-selectin levels did not differ between patients and controls. **Conclusion:** Unlike previous studies that have found increased L-selectins in unmedicated patients with schizophrenia, L-selectin levels were reduced in the current sample of medicated patients with schizophrenia. The potential utility of L-selectin as a biomarker of antipsychotic exposure in patients with schizophrenia should be further evaluated.
Keywords: Schizophrenia, Plasma Selectins, Biomarkers

NO. 91

PREDICTING NONSUICIDAL SELF-INJURY: THE EFFECT OF ACUTE EMOTIONAL STATES AND RELATIONSHIP ATTACHMENT STYLES

Lead Author: Ali M. Molaie, B.A.
Co-Author(s): Zimri S. Yaseen, M.D., Jessica Briggs, B.A., Anna Frechette, B.A., Molly Duffy, B.A., Igor I. Galynker, M.D., Ph.D.

SUMMARY:

Background: Current research on nonsuicidal self-injury (NSSI) highlights the significance of emotional and interpersonal distress in the development of self-injurious behavior. To date, little research has examined the interaction between relationship styles and acute emotional states on subsequent NSSI. This study determined if adult attachment styles and acute affective and cognitive dysregulation predicted the occurrence of nonsuicidal self-injurious behavior. **Methods:** Attachment styles were measured using the 30-item self-report Relationship Styles Questionnaire (RSQ). The Suicide Crisis Inventory (SCI), a 42-item self-report measure, was administered to measure the presence of acute emotional states in which the risk of imminent suicide attempt is elevated. Presence of nonsuicidal self-injurious behavior was determined using the Columbia Suicide Severity Rating Scale (C-SSRS). The RSQ, SCI and C-SSRS were administered to 201 adult psychiatric inpatients within 72 hours of admission to Mount Sinai Beth Israel. The SCI was re-administered upon discharge, and the C-SSRS was administered during a one- to two-month follow-up interview (n=137). Correlation and regression analyses were performed to determine the associations between attachment styles, acute emotional states, and lifetime and postdischarge NSSI. **Results:** Logistic regression analyses found that preoccupied attachment style was an independent predictor of lifetime NSSI ($p<0.006$), as was

emotional pain at admission (p<0.036). Emotional pain at discharge significantly predicted NSSI at follow-up (p<0.0184). Additionally, there was a significant correlation between preoccupied attachment and emotional pain at admission (p<0.002), but not at discharge (p<0.069). Moderation analyses were not significant; however, preoccupied attachment moderated the relationship between emotional pain at discharge and presence of NSSI at follow-up at a level trending toward significance. Low preoccupied attachment increased the influence of emotional pain on the presence of NSSI at follow-up, though high preoccupied attachment did not produce an effect. Further, acute emotional pain was a partial mediator between the trait of preoccupied attachment and lifetime NSSI. **Conclusion:** Preoccupied attachment and emotional pain are associated with nonsuicidal self-injurious behavior, both prior to and upon discharge from acute psychiatric care. The interaction between trait attachment styles and acute emotional states may be a useful factor to consider when determining risk for NSSI and may also be a beneficial target for intervention.

NO. 92

SHOULD INCARCERATED, PSYCHOTIC, POSTPARTUM PRISONERS BE ALLOWED TO HOLD THEIR BABIES?

Poster Presenter:Vanessa Padilla, M.D.
Lead Author: Dominique L. Musselman, M.D., M.S.
Co-Author(s): Ephrain Gonzalez, Ph.D., Regina Carney, M.D., Grace Caldes, M.A., Anastasia Sokol, M.A., Frances Atuyotan, L.C.S.W., Tanya De La Torre, L.C.S.W., Sylvia Forment, L.C.S.W., Daniel Mandri, M.D., Salih Yasin, M.D.

SUMMARY:

Background: Incarcerated mothers with major mental health disorders may be kept "medication-free" to minimize teratogenic or other adverse medication-related effects upon infants after birth. Thus, forensic officials and health care providers may be reluctant to allow incarcerated mothers to hold their newborn infants out of concern for infant safety or increasing emotional distress of mother upon separation from their newborns. There is no data regarding in-hospital and postdischarge outcomes of incarcerated, psychotic women allowed to hold their newborn babies in the immediate postpartum period. **Methods:** This pilot study is comprised of a case series of five psychotic, pregnant women incarcerated at a state forensic unit (n=3) run by a for-profit company or at a county forensic unit staffed by academic psychiatrists within the municipal health care system. Inclusion criteria included incarcerated women without previous arrest for child abuse or neglect who delivered their infants from February 2014 to present at an academic medical center's obstetric service. Semi-structured diagnostic interviews were performed, as well as screening for cognitive deficits, depression and suicidality. Relevant outcomes were acceptance of antipsychotic medication after childbirth, recidivism/rearrest, hospital readmission and regaining visitation rights/custody of their children. **Results:** All were minority women of low socioeconomic status with psychiatric diagnoses of schizophrenia or schizoaffective disorder and comorbid substance abuse. Average age was 32. Four were without antipsychotic or antidepressant treatment before delivery, either due to institutional prepartum protocol, patient refusal or both. Three mothers were not allowed to hold their babies out of concern for infant safety (due to maternal irritability, inability to acknowledge baby before/during delivery or institutional protocol)—these three mothers expressed emotional distress or exhibited depressive symptoms in the postpartum period. Two mothers were allowed to hold their infants and exhibited enthusiasm and gentleness toward their newborns. After delivery, four mothers accepted treatment with antipsychotic medication. One mother has been rearrested. None have had a hospital readmission, and two have gained visitation rights. **Conclusion:** This small case series supports the practice of allowing carefully screened, and closely monitored, psychotic, incarcerated mothers to hold their babies after birth. Future studies should include more mothers, especially who require prepartum antipsychotic medications due to the severity of their psychotic illness.

NO. 93

LONG-TERM EFFECTIVENESS OF ARIPIPRAZOLE ONCE-MONTHLY IS MAINTAINED IN THE QUALIFY EXTENSION STUDY

Poster Presenter:Steven Potkin, M.D.
Lead Author: Dieter Naber, M.D.
Co-Author(s): Ross A. Baker, Anna Eramo, Carlos Forray, Karina Hansen, Christophe Sapin, Timothy Peters-Strickland, Anna-Greta Nylander, Peter Hertel, Simon Nitschky Schmidt, Jean-Yves Loze

SUMMARY:

Background: The QUALIFY (Quality of Life with Aripiprazole Maintena®) study (NCT01795547) is the first to directly compare two different atypical, long-acting injectable antipsychotics with health-related quality of life and functioning as primary outcome in patients with schizophrenia. The primary analysis showed superior improvements with the dopamine D2 partial agonist aripiprazole once-monthly 400mg (AOM400) versus the dopamine D2 antagonist paliperidone palmitate once-monthly (PP1M) on the Heinrichs-Carpenter Quality-of-Life Scale (QLS) total score. This extension assessed long-term tolerability and effectiveness of AOM400 treatment in patients who completed the QUALIFY study. **Methods:** This was an open-label, flexible-dose, 28-week extension study (NCT01959035) in patients with schizophrenia who received AOM400 treatment and completed the lead-in QUALIFY study (n=100). Patients received six monthly injections of AOM400 in the extension, with safety and effectiveness data collected at each visit. The 24-week treatment extension allows, when aggregated to the data from the lead-in study, for nearly one year of safety and effectiveness data for AOM400 in the maintenance treatment of schizophrenia. Effectiveness data included QLS total and Clinical Global Impression–Severity of Illness (CGI-S) scores with changes from baseline assessed using a mixed model for repeated measures in the extension study alone and in the lead-in and extension studies combined. **Results:** Of the 88 enrolled and treated patients, 77 (88%) completed the study. The treatment-emergent adverse events (TEAEs) with highest incidence during the extension study were increased weight (n=6, 6%), toothache (n=3, 3%) and headache (n=3, 3%). Three patients (3%) had serious adverse events of alcoholism, dysphoria and gastroesophageal reflux disease (one patient each). Effectiveness assessed during the extension study was maintained with AOM400 treatment, with continued minor improvements from baseline: least squares mean (LSM) changes from baseline of the extension to week 24 were 2.32 (95% CI [−1.21, 5.85]) in QLS total score and −0.10 (95% CI [−0.26, 0.06]) in CGI-S score. The aggregated LSM changes from baseline of the lead-in study were 11.54 (95% CI [7.45, 15.64]) for QLS total score and −0.98 (95% CI [−1.18, −0.79]) for CGI-S score. **Conclusion:** Continued long-term treatment with AOM400 was safe and well tolerated in patients rolling over from the lead-in QUALIFY study. In terms of effectiveness, the completion rate in the extension study was close to 90%, with robust and clinically meaningful improvements in health-related quality of life and functioning being maintained. These results further support the clinical benefits of AOM400 for long-term treatment in patients with schizophrenia.

NO. 94

PSYCHOSIS IN MACHADO-JOSEPH DISEASE

Lead Author: Antonio L. Nascimento, M.D., M.Sc.
Co-Author(s): Marco Antonio Alves Brasil, M.D., Ph.D., M.Sc.

SUMMARY:

Background: Machado-Joseph disease (MJD), also known as spinocerebellar ataxia type 3 (SCA3), is an autosomal dominant form of ataxia with late onset. The disease involves predominantly cerebellar, pyramidal, extrapyramidal, motor neuron and oculomotor systems. Symptoms of MJD usually start during adolescence or adulthood and worsen over time. These include memory deficits, spasticity, difficulty with speech and swallowing, weakness in arms and legs, clumsiness, frequent urination, and involuntary eye movements. This disease was first described among individuals of Azorean descent (and named after the patriarchs of two families with several involved individuals in Azores, Portugal), but today, MJD/SCA3 is known to exist worldwide. MJD is the most common form of spinocerebellar ataxia worldwide. It represents about 20% of the patients with spinocerebellar ataxia in the U.S. and almost 50% of patients with spinocerebellar ataxia in German, Japanese, Portuguese and Taiwanese samples. MJD is caused by a mutation characterized as an expansion of an unstable CAG tract in exon 10 of the ATXN3 gene, located at 14q32.1. Although the majority of symptoms of MJD are motor symptoms, in August 2015, the first article describing the incidence of psychotic symptoms in patients with MJD was published (these symptoms affected 4.4% of patients in the studied sample). We report the case of a patient with psychotic symptoms in treatment in our service since 2013. **Case:** We report the case of a 54-year-old man with MJD since the age of 35. At the age of 51, the patient started to present delusional perceptions (when looking at his niece, the patient identified numerous features in her appearance that he considered to be similar to his face, so he thought that she might be his daughter instead of his brotherÂ´s). He also presented abrupt changes in his behavior; he decided not to sleep in his bedroom with his wife, moving to another bedroom in his house, which he kept locked at night due to a persecutory delusion

(the patient believed that his wife and his brother wanted to kill him). He also presented insomnia, restlessness and aggressiveness. Olanzapine was started at 5mg/d and slowly titrated to 20mg/d. The patient presented full remission of psychotic symptoms with the treatment and has remained on olanzapine 20mg/d for the last two years without recurrence. **Discussion:** Psychotic symptoms have been recently described in patients with MJD. These symptoms are usually present in patients with late-onset MJD. Psychotic symptoms present diagnostic and treatment challenges in patients with MJD, as several antipsychotics might cause extrapyramidal side effects, which could worsen MJD symptoms. Thus, the adequate choice of treatment is paramount for patient safety. More studies are necessary in order to establish the safety and efficacy of antipsychotic treatment in this population.

NO. 95

LONG-TERM CARIPRAZINE TREATMENT FOR THE PREVENTION OF RELAPSE IN PATIENTS WITH SCHIZOPHRENIA: ANALYSIS OF ADDITIONAL EFFICACY OUTCOMES

Lead Author: Henry A. Nasrallah, M.D.
Co-Author(s): Suresh Durgam, M.D., Willie Earley, M.D., Kaifeng Lu, Ph.D., István Laszlovszky, Ph.D., Pharm.D.

SUMMARY:

Background: Cariprazine, a potent dopamine D3/D2 receptor partial agonist that binds preferentially to D3 receptors, is approved for the treatment of schizophrenia. Cariprazine has demonstrated efficacy in six-week, randomized, placebo-controlled trials in patients with acute exacerbation of schizophrenia. This study evaluated the efficacy, safety and tolerability of cariprazine versus placebo in the prevention of relapse in patients with schizophrenia (NCT01412060). **Methods:** This was a multinational, randomized, double-blind, placebo-controlled, parallel-group study of adult patients with schizophrenia. Schizophrenic symptoms were stabilized during two open-label phases: an eight-week, flexible-dose, run-in phase and a 12-week, fixed-dose, stabilization phase with cariprazine (3–9mg/day). Patients completing the 20-week open-label treatment phases were randomized to continue cariprazine (3, 6 or 9mg/day) or switch to placebo for up to 72 weeks of double-blind treatment. The primary efficacy parameter was time to relapse, defined as worsening of symptom scores, psychiatric hospitalization, aggressive/violent behavior or suicide risk. Additional efficacy parameters included score changes in the Positive and Negative Syndrome Scale (PANSS; total and subscales), Clinical Global Impression-Severity (CGI-S), Negative Symptom Assessment (NSA-16), and Personal and Social Performance Scale (PSP). **Results:** 264 out of 765 (35%) patients completed open-label treatment; mean improvements from baseline were observed in PANSS total (−22.8), PANSS positive (−7.4), PANSS negative (−4.9), CGI-S (−1.1), NSA-16 (−8.2) and PSP (+11.1) scores. At the end of open-label treatment, 200 patients met eligibility criteria and were randomized to double-blind placebo (n=99) or cariprazine (n=101) treatment. The time to relapse was significantly longer in patients who continued cariprazine than in patients who switched to placebo (p=0.0010, log-rank test). Relapse occurred in nearly twice as many placebo- (47.5%) as cariprazine-treated (24.8%) patients (hazard ratio=0.45, 95% CI [0.28, 0.73]). At the end of the double-blind treatment period, a greater mean worsening of symptoms was seen in placebo- versus cariprazine-treated patients on all efficacy parameters: PANSS total (+13.2 vs. +5.0), PANSS positive (+4.3 vs. +1.3), PANSS negative (+2.4 vs. +1.4), CGI-S (+0.7 vs. +0.1), NSA-16 (+4.1 vs. +0.6) and PSP (-7.2 vs. 0.0). **Conclusion:** Long-term cariprazine treatment was significantly more effective than placebo for the prevention of relapse in patients with schizophrenia. Mean change in scores on additional efficacy parameters suggested improvement of symptoms during open-label cariprazine treatment; during the subsequent double-blind treatment period, patients randomized to cariprazine experienced less worsening of symptoms than placebo-treated patients. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 96

CLINICAL CHARACTERISTICS, COMORBIDITIES AND HEALTH CARE UTILIZATION AMONG PATIENTS WITH MAJOR DEPRESSIVE DISORDER WITH MIXED FEATURES

Lead Author: Daisy S. Ng-Mak, Ph.D.
Co-Author(s): Andrew A. Nierenberg, M.D., Pankaj A. Patel, Pharm.D., M.S., Debra E. Irwin, Ph.D., M.S.P.H., Chien-Chia Chuang, Ph.D., Kitty Rajagopalan, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Major depressive disorder (MDD) with mixed features is now identified as a distinct nosological entity in the *DSM-5*. Data are lacking on real-world outcomes associated with MDD with mixed features. This study compared outcomes of commercially insured MDD patients with and without mixed features. **Methods:** A retrospective analysis was conducted using administrative claims data from the MarketScan® Commercial and Medicare databases (January 1, 2010 through September 30, 2014). Patients were included if they were newly diagnosed with MDD (first MDD diagnosis as the index date). Patients were excluded if they had a diagnosis of bipolar disorder or did not have at least 12 months of continuous enrollment before and after the index date. In the absence of a specific mixed features code, the presence of a hypomania diagnosis (ICD-9 code: 296.89) within 30 days following the index date was used to define "MDD with mixed features." Outcomes compared during the 12-month follow-up period included suicide ideation, substance abuse, anxiety disorder, mental health-related inpatient admissions and mental health-related health care costs. Generalized linear models were used to control for confounding variables from demographic and clinical variables; odds ratios (OR) and 95% confidence intervals (CI) were estimated. **Results:** This analysis included 1,269 operationally defined MDD patients with mixed features and 872,165 MDD patients without mixed features. MDD patients with mixed features were younger (42.3 vs. 47.4; p<0.0001) and more likely to be male (34.8% vs. 31.9%; p=0.025) than those without mixed features. After controlling for potential confounders, MDD patients with mixed features were more likely to have diagnoses of suicidal ideation (OR=5.3, 95% CI [4.4, 6.4]), substance abuse (OR=1.9, 95% CI [1.5, 2.2]) and anxiety disorder (OR=1.2, 95% CI [1.03, 1.3]) during the 12-month follow-up period. MDD patients with mixed features were almost five times as likely to experience a mental health-related inpatient admission compared to MDD patients without mixed features (OR=4.9, 95% CI [4.2, 5.7]). The total adjusted mean mental health-related health care costs were 2.1 times higher for MDD patients with mixed features ($6,252) than those without mixed features ($3,005) (p<0.001). **Conclusion:** MDD patients with mixed features had poorer outcomes, were more likely to have mental health-related inpatient admissions and incurred higher mental health-related health care costs. Future research is needed to identify optimal treatment regimens for this patient population.

NO. 97

COST SAVINGS ASSOCIATED WITH IMPROVED ADHERENCE AMONG PATIENTS WITH SCHIZOPHRENIA USING LURASIDONE

Lead Author: Daisy S. Ng-Mak, Ph.D.
Co-Author(s): Ken O'Day, Chien-Chia Chuang, Michelle L. Friedman, Kitty Rajagopalan, Antony Loebel

SUMMARY:

Background: Schizophrenia, a chronic, severe and disabling brain and behavior disorder, poses a significant economic burden on payers and society. Atypical antipsychotics are standard care for schizophrenia; however, poor medication adherence may limit their effectiveness and adversely affect subsequent outcomes. **Objective:** Estimate outcomes and cost offsets of lurasidone associated with improved adherence compared to other atypical antipsychotics among patients with schizophrenia from Medicaid and societal perspectives in the US. **Methods:** An analytic model was developed to estimate the three-year health care resource utilization and outcomes (hospitalization, emergency psychiatric services use, arrests, violence, victim of crime and substance use) and associated costs among adult patients with schizophrenia receiving lurasidone, aripiprazole, olanzapine, quetiapine, risperidone and ziprasidone. Adherence data during the six-month post-treatment initiation period were obtained from a retrospective claims database study; health care resource utilization and outcomes data were from a prospective U.S. schizophrenia care and assessment program study. Costs of outcomes were obtained from publicly available sources and adjusted to 2015 U.S. dollars. Costs per atypical antipsychotic were calculated and then extrapolated across a Medicaid plan population of patients with schizophrenia prescribed atypical antipsychotics. The effect of parameter uncertainty on model outcomes was evaluated utilizing a probabilistic sensitivity analysis. **Results:** Due to greater adherence with lurasidone, the model predicted the use of lurasidone resulted in better outcomes (hospitalizations: 19.5% vs. 21.0%–21.6%; emergency psychiatric services use: 8.1% vs. 8.6%–8.9%; arrests: 5.2% vs. 5.7%–5.9%; violence: 7.4% vs. 8.2%-8.5%; victim of crime: 11.2% vs. 12.2%–12.5%; substance use: 24.5% vs. 25.4%–25.7%) and resulted in per-patient savings of $401,

$285, $342, $359 and $396 over three years, respectively, compared to aripiprazole, olanzapine, quetiapine, risperidone and ziprasidone. The primary driver of cost savings was the reduction in hospitalizations and victim of crime. In a Medicaid plan with 10,000 atypical antipsychotic users where the utilization of lurasidone increased from 10% to 20%, total predicted cost savings were $343,365 over three years. In the probabilistic sensitivity analysis, similar cost savings were observed, and lurasidone was the least costly treatment in 99.8% of simulations. **Conclusion:** In this assessment, lurasidone was associated with reduced health care resource utilization, improved outcomes and cost savings compared to other atypical antipsychotics due to improved adherence.

NO. 98

CASE REPORT: ADDITION OF NALTREXONE AND BUPROPION TO LORCASERIN TO MANAGE OLANZAPINE-INDUCED WEIGHT GAIN

Poster Presenter:Kevin R. Bera, B.S.
Lead Author: Charles Song Nguyen, M.D.
Co-Author(s): Eric Tran, Pharm.D.

SUMMARY:

Background: The use of a selective 5-HT2C agonist such as lorcaserin has been shown to counter the 5-HT2C antagonism of olanzapine. Lorcaserin promotes satiety and decrease food intake by activating the 5-HT2C receptors on anorexigenic pro-opiomelanocortin (POMC) neurons in the hypothalamus. The receptor affinities, Ki, of lorcaserin and olanzapine for the 5-HT2C receptor are 13 and 14, respectively. Given the similar Ki between lorcaserin and olanzapine, lorcaserin theoretically may not be able to dislodge the antagonism of 5-HT2C by olanzapine. Therefore, there may be a role to use different mechanisms of action to counter the effects of weight gain induced by olanzapine. The combination of bupropion and naltrexone is thought to produce a substantially greater effect on the firing rate of the POMC neurons than either medication by itself, leading to decreased cravings and reduced food intake. In addition, the combination of both medications might regulate the mesolimbic reward pathways, leading to a reduction in reward values and goal-oriented behaviors. **Case:** A 36-year-old Caucasian male with obsessive-compulsive disorder and schizophrenia had been stable on olanzapine 30mg qhs and risperidone 6mg/d, but gained 70 pounds. He weighed 263 pounds (BMI=37.3) when he started lorcaserin 10mg bid as part of a research project in June 2014. He lost 14.6 pounds (5.6% of initial weight) after three months. However, he was unable to sustain the weight loss after the lorcaserin was discontinued after he completed the research study. When lorcaserin was restarted five months later, he noticed an improvement in satiety, but he was unable to control his cravings. Hence, he continued to gain weight. He was also receiving sertraline 200mg qam along bupropion 150mg bid for his depression. In October 2015, he weighed 271 pounds when naltrexone 25mg qam was added to help control the cravings. A month later, the patient reported decreased food cravings and weighed in at 259 pounds. The patient is still on treatment. We will present his latest weight and metabolic indices. **Discussion:** The patient had a positive response to lorcaserin initially, but didn't fare too well when it was reinitiated five months later. Even though the patient felt full, he was unable to control his cravings and poor eating habits, especially at night. Once naltrexone 25mg qam was added to bupropion 150mg bid and lorcaserin 10mg bid, the patient noticed a decrease in food cravings. He was able to control his eating habit better, leading to a weight loss of 14 pounds. **Conclusion:** This case report demonstrates the potential use of naltrexone and bupropion combination as an adjunctive treatment along with lorcaserin in the management of olanzapine-induced weight gain in patients with schizophrenia who exhibit depressive symptoms.

NO. 99

SYMPTOMATIC AND FUNCTIONAL REMISSION AS A THERAPEUTIC OBJECTIVE IN MAJOR DEPRESSIVE DISORDER: VORTIOXETINE COMPARATIVE DATA IN THE WORKING POPULATION

Poster Presenter:Rebecca Z. Nielsen, M.Sc.
Lead Author: George I. Papakostas, M.D.
Co-Author(s): Mélanie Brignone, Pharm.D., M.S., Brigitte Tonnoir, Pharm.D.

SUMMARY:

Background: Major depressive disorder (MDD) is associated with significant functional impairment in different dimensions (e.g., work). Optimally, the goal of antidepressant treatment should not only be symptomatic remission but also the restoration of normal functioning. **Objective:** Evaluate the efficacy of vortioxetine, an antidepressant with a multimodal mechanism of action, in achieving symptomatic and/or functional remission in the working population using data from two active comparator

studies: SOLUTION (NCT01571453) and REVIVE (NCT 01488071). **Methods:** SOLUTION was an eight-week double-blind, randomized, fixed-dose study comparing vortioxetine (10mg) to venlafaxine XR (150mg) in MDD patients in Asia. REVIVE was a 12-week double-blind, randomized, flexible-dose study comparing vortioxetine (10–20mg) to agomelatine (25–50mg) in patients who switched treatment due to an inadequate response to previous antidepressant treatment of their current depressive episode. Post hoc analyses of SOLUTION and REVIVE considered three levels of treatment success: symptomatic remission on the Montgomery-Åsberg Depression Rating Scale (MADRS total score≤10), functional remission on the Sheehan Disability Scale (SDS total score≤6) and combined symptomatic/functional remission (MADRS total score≤10 and SDS total score≤6) at each assessment visit. These analyses (using ANCOVA and observed cases) were performed on the subgroup of working patients, based on SDS item 1 and based on patients who have both MADRS and SDS total scores at all visits assessed. **Results:** In SOLUTION, approximately 70% of patients were employed (vortioxetine n=154; venlafaxine n=141). The proportion of patients achieving each level of treatment success was numerically greater for vortioxetine than venlafaxine at week 8. For the combined outcome (MADRS and SDS), the remission rate was 29.9% vs. 26.2% for vortioxetine and venlafaxine, respectively. In REVIVE, approximately 50% of patients were employed (vortioxetine n=134, agomelatine n=123). The proportion of patients achieving each level of treatment success was also numerically greater for vortioxetine than agomelatine. The rate of the combined symptomatic and functional remission increased over time and was higher in the vortioxetine arm than the agomelatine arm: 19.4% vs. 11.4%, 29.9% vs. 24.4% and 47.8% vs. 38.2% at weeks 4, 8 and 12, respectively. **Conclusion:** These post hoc analyses suggest that vortioxetine provides benefit versus venlafaxine XR and agomelatine in achieving remission defined using symptomatic measures, functional measures or both, with clinically relevant differences of more than five percent from week 4 onward in the REVIVE study. These results should be interpreted with respect to the reduced sample size focusing on the working population.

NO. 100

POSTPARTUM PATIENTS ADMITTED TO AN INPATIENT PSYCHIATRIC UNIT: AN 18 MONTHS' EXPERIENCE

Lead Author: Armagan Ozdemir
Co-Author(s): Semra Enginkaya, Dilara BulanÄ±k, Cana Aksoy-Poyraz, Emre Cirakoglu, Nesrin Buket Tomruk

SUMMARY:
Background: Childbirth has the highest relative risk of any vulnerability factor for the onset of severe recurrent psychotic or affective episodes. The postpartum period is likely to be a critical time that usually requires hospitalization,, presenting risks for women and their offspring. This study described demographic data of postpartum patients admitted to an inpatient psychiatric unit and analyzed treatment preferences for acutely ill postpartum patients. **Methods:** A prospective chart review was carried out to identify pregnant patients who were admitted to the inpatient unit during the period April 2014 to September 2015. Details regarding their sociodemographic, clinical and treatment data were obtained from these records for the study. **Results:** Twenty-four postpartum patients were admitted to our psychiatry inpatient clinic during the survey period. The mean age of the patients was 29.0±6.2. Bipolar disorder (45.8%) was the most common diagnosis, followed by psychotic disorder (29.2%) and unipolar severe depression (25%). Sixty percent of patients were hospitalized in the first three months of the postpartum period. Thirty percent of patients had preterm delivery. Eleven patients (45.8%) out of 24 had a psychiatric illness before getting pregnant. It was found that premenstrual syndrome was reported by 30.4%, and dysmenorrhea was reported by 47.8% of patients. The prevalence of unplanned and unwanted pregnancies were higher across all psychiatric disorder groups (41.7% and 29.2%, respectively). **Conclusion:** The identification of risk markers of postpartum psychiatric disorders would enhance the ability to prevent and treat them. It is unclear whether prenatal, obstetric or infant complications exacerbate the risk for postpartum psychiatric disorders. Obstetric risk factors for postpartum psychiatric disorders may be unplanned or unwanted pregnancy and preterm delivery. We found an increased risk during the first three months after delivery for the onset of these episodes, and women with bipolar affective disorder were at particular risk of postpartum psychiatric readmission.

NO. 101

PSYCHOMETRIC PROPERTIES OF THE TURKISH VERSION OF THE BRIEF COGNITIVE ASSESSMENT TOOL

Lead Author: Erguvan T. Ozel-Kizil, M.D.
Co-Author(s): S. Kirici, E. Cobanoglu, B. Senel, G. Bastug, B. Bilgin-Kapucu, F. Bashirov, N.B. Tepe-Bal, W.E. Mansbach

SUMMARY:

Objective: The Brief Cognitive Assessment Tool (BCAT) was developed and validated by Mansbach and colleagues in a non-clinical sample. It is a 21-item screening instrument that measures contextual memory and executive functions, therefore providing a more detailed cognitive screening. We examined the psychometric properties of the Turkish version of the BCAT in patients with Alzheimer's disease (AD), mild cognitive impairment (MCI) and healthy elderly controls (HE). In this paper, preliminary results of the study will be presented. **Methods:** The study sample consisted of 35 patients with AD (*DSM-5* criteria), 28 with MCI (Peterson's criteria) who were admitted to the geriatric psychiatry outpatient clinic of the university hospital between March and November 2015. Thirty-four HE who were living in a nursing home were also included. Participants were administered the Mini Mental Status Examination (MMSE), the Clock Drawing Test (CDT–Shulman's five-point scale), the Turkish form of the Auditory-Verbal Learning Test (AVLT), the Functional Activities Scale (FAS) and the Montreal Cognitive Assessment (MoCA). The BCAT was translated to Turkish after copyright procedures. Informed consents were taken from all participants and their caregivers. The BCAT and the MoCA were administered in different sessions within a week. The groups were compared in terms of BCAT and the MoCA scores in order to examine the concurrent validity. Also, the BCAT was readministered to 20 patients after one month for test-retest reliability. Cronbach alpha was calculated for internal consistency (0.867). **Results:** There was no statistical difference between the groups in terms of age and education. Patients with AD performed worse than patients with MCI and HE in all cognitive measures. The BCAT and MoCA scores were highly correlated in the whole sample ($r=0.87$, $p<0.001$). Total BCAT and MoCA scores were both different in AD patients. However, they were similar in MCI and HE. Except visual recognition/naming, all subscale scores of the BCAT were lower in AD. **Conclusion:** This study revealed that the Turkish form of the BCAT was a valid and reliable screening instrument for AD. The preliminary results showed that the total scores of the Turkish form of the BCAT were similar in MCI patients and HE.

NO. 102

JAPANESE AND CAUCASIAN PHARMACOKINETICS OF SINGLE DOSES OF BI 425809: A DOUBLE-BLIND PLACEBO-CONTROLLED STUDY IN HEALTHY VOLUNTEERS

Lead Author: Jiyeon (Regina) Park
Co-Author(s): Yasuhiro Tsuda, Hiroyuki Ugai, Michael Desch, Sophia Goetz, Christina Schlecker, Viktoria Moschetti, Armin Schultz, Karl-Heinz Liesenfeld, Sven Wind, Glen Wunderlich, Sun-Young A. Yum, Jae-Gook Shin

SUMMARY:

Background: BI 425809, a glycine transporter 1 (GlyT1) inhibitor, is a new chemical entity being developed for the treatment of cognitive impairment associated with schizophrenia (CIAS) and Alzheimer's disease. The objectives of Trial 1346.4 were to investigate safety, tolerability and pharmacokinetics (PK) of BI 425809 in Japanese healthy male volunteers. **Methods:** A single-center trial evaluated single-dose treatment of BI 425809 with tablet formulation in three dose groups (10, 25, and 50mg). A total of 25 Japanese healthy male volunteers (18 subjects for PK set) participated in Trial 1346.4. Pharmacokinetic parameters including AUC0-â^ž, AUC0-72, C_{max}, t_{max} and $t_{Â½}$ after a single dose were measured. Comparisons in PK were made with results from other trials conducted in Caucasians. Safety was evaluated with adverse event (AE) monitoring, clinical laboratory assessments, vital signs, 12-lead electrocardiogram (ECG), physical examinations, ophthalmological tests and visual analogue scales (VAS) to assess psychedelic effects (BandL, Bowdle). **Results:** Plasma concentration-time profile and PK parameters in Japanese subjects were comparable to those observed in Caucasians. BI 425809 was absorbed in plasma with median t_{max} values of 4–4.5h in all dose groups of both ethnic populations. No apparent difference was observed in the terminal phase plasma concentration between Japanese and Caucasian subjects. The exposure parameters after administration of BI 425809 with a tablet formulation increased slightly less than proportionally to the dose. The cumulative urinary excretion of BI 425809 was generally low. A total of three of the 25 treated Japanese subjects (12.0%)

reported at least one AE. The frequency of drug-related AEs was low and from the placebo group (one subject, 4.0%, placebo group; moderate somnolence 6–24 hours after dosing). All reported AEs were of mild or moderate grades; no severe AEs were reported. No protocol-specified AEs of special interest, deaths or other serious AEs were reported. There were no clinically significant safety-related findings in the clinical laboratory evaluation, ECG, vital signs, VAS or ophthalmological tests. **Conclusion:** BI 425809 showed comparable PK characteristics in Japanese and Caucasian subjects. The drug was generally well tolerated after a single dose in Japanese healthy volunteers. These results support the inclusion of Japanese subjects into global clinical trials.

NO. 103

TESTING INTRANASAL OXYTOCIN FOR ENHANCING SOCIAL COGNITION IN BORDERLINE AND SCHIZOTYPAL PERSONALITY DISORDER

Lead Author: M. Mercedes Perez-Rodriguez, M.D., Ph.D.

Co-Author(s): Ethan Rothstein, Amanda M. Fisher, Nicole E. Derish, Ursula Rogers, Shasha Lin, Antonia S. New, Harold Koenigsberg, Larry J. Siever

SUMMARY:

Background: Borderline (BPD) and schizotypal (SPD) personality disorders are characterized by impaired interpersonal functioning, likely due to abnormal social cognition. Mentalizing—the accurate understanding of mental states—is a domain of social cognition. Two types of mentalizing errors have been described: Hypomentalizing errors are simplistic interpretations of social cues, likely due to deficits in social information processing. Hypermentalizing errors are distorted misinterpretations of social cues, likely due to hypersensitivity to social stimuli. Intranasal oxytocin may enhance social cognition. We characterized mentalizing errors in SPD and BPD patients and testes the effect of intranasal oxytocin on mentalizing. **Methods:** Forty-five subjects (15 BPD, 15 SPD, 15 healthy controls [HC]) participated in the study. Social cognition outcome measures included Movie for the Assessment of Social Cognition (MASC), a real-life, naturalistic task that measures mentalizing. It involves watching a movie about four characters. Multiple-choice questions about the characters' feelings, thoughts and intentions yield quantitative (mentalizing accuracy) and qualitative (hypo-/hypermentalizing errors) measures. Participants were treated with intranasal oxytocin 24/40IU versus placebo. Social cognitive measures were compared across groups (BPD, SPD, HC) and treatments (oxytocin 24/40IU vs. placebo) using ANOVA. Results: BPD ($p=0.017$) and SPD ($p=0.004$) patients had lower mentalizing accuracy than HCs ($f=6.411$, $df=2$, $p=0.003$). BPD patients made more hypermentalizing errors ($f=4.44$, $df=2$, $p=0.017$) than HCs ($p=0.005$) and SPD patients ($p=0.05$). SPD patients made more hypomentalizing errors ($f=9.32$, $df=2$, $p<0.001$) than HCs ($p<0.001$) and BPD patients ($p=0.040$). Intranasal oxytocin increased the hyper-/hypomentalizing error ratio in both BPD and SPD patients ($f=6.84$, $df=1$, $p=0.019$). **Conclusion:** SPD and BPD patients have lower accuracy in understanding the mental states of others (mentalizing) compared to HCs. BPD patients make more hypermentalizing errors, while SPD patients make more hypomentalizing errors. Intranasal oxytocin increased the hyper-/hypomentalizing error ratio in both BPD and SPD patients.

NO. 104

CHARACTERIZATION OF POPULATION PHARMACOKINETICS OF CARIPRAZINE AND ITS MAJOR METABOLITES

Lead Author: Antonia Periclou, Ph.D.

Co-Author(s): Luann Phillips, M.S., Sébastien Bihorel, Ph.D., Pharm.D., Parviz Ghahramani, Ph.D., Margit Kapás, Ph.D., Timothy Carrothers, Sc.D., Tatiana Khariton, Ph.D.

SUMMARY:

Background: Population pharmacokinetic (PK) analysis was undertaken to describe the concentration-time profiles of cariprazine (CAR) and its two major metabolites of similar pharmacological activity, desmethyl-cariprazine (DCAR) and didesmethyl-cariprazine (DDCAR), and to assess the potential impact of demographic covariates, creatinine clearance and metabolizer status. **Methods:** Data were obtained from three Phase 1 and 10 Phase 2/3 studies in adult patients (age 18–65) with schizophrenia or bipolar mania. The combined dataset consisted of 13,227 cariprazine, 12,462 DCAR and 12,092 DDCAR samples from 2,199, 2180 and 2,140 patients, respectively. Patients (66% male, mean weight=79kg, mean age=38) were administered once-daily doses of 0.5–12.5mg (various titrations). In four studies, serial sampling was performed over 24 hours following the first dose, and over 24, 168 or 2,016 hours following the final dose (depending on cohort). In the

remaining studies, four to nine non-serial blood samples were drawn at various times during the studies. Population PK modeling was performed using NONMEM, a nonlinear mixed-effects modeling software package. Compartmental modeling was performed sequentially, wherein the elimination rate of CAR served as the formation rate of DCAR, and the elimination rate of DCAR, with a delay, served as the formation rate for DDCAR. Standard pharmacometric practices for population model development and evaluation of covariates were utilized. **Results:** Cariprazine PK was described by a three-compartment model with zero-order input of the dose to a depot compartment followed by first-order absorption and first-order elimination. DCAR and DDCAR PK were described by two-compartment models with linear elimination. Based on predicted steady-state AUC values, DDCAR was the most prominent moiety (64.2% of total CAR [molar sum of CAR, DCAR and DDCAR] exposures), while CAR and DCAR represented 28.1% and 7.7% of total CAR, respectively. Weight, gender and race were statistically significant predictors of PK parameters. However, the resulting differences in exposures were not large enough to require dosage adjustment. CYP2D6 metabolizer status was not a statistically significant predictor of PK parameters, and mean exposure for the CYP2D6 poor metabolizers was within 10% of that of extensive metabolizers. Covariate analysis showed no statistically significant effect of creatinine clearance on CAR, DCAR or DDCAR clearance. The median time to 90% of steady state was 5, 5, 21 and 18 days for CAR, DCAR, DDCAR and total CAR, respectively. The median functional half-life (time to reach 90% steady-state/3.32) was 1.5, 1.5, 6.3 and 5.4 days for CAR, DCAR, DDCAR and total CAR, respectively. **Conclusion:** Population PK modeling provided a quantitative description of the concentration time profile of cariprazine and its metabolites. This research was supported by funding from Forest Laboratories, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 105

CHANGING TRENDS IN CHILD AND ADOLESCENT INPATIENT PSYCHIATRIC HOSPITALIZATION: THE ASSOCIATION BETWEEN DECREASING LENGTH OF STAY AND READMISSION RATE

Lead Author: Christopher A. Petersen, M.D.
Co-Author(s): Lance Feldman, M.D., Lan Kong, Ph.D.

SUMMARY:

Objective: Study the association between reduced length of stay and readmission rates in an acute care child and adolescent psychiatric unit with an average age of 10.7. **Methods:** Data for 3,896 children and adolescents on length of stay, total discharges and readmission rates from 1991 to 2003 with marked reduced lengths of stay were obtained from the hospital database at Penn State Hershey. **Results:** The mean length of stay decreased dramatically from 35.55 days to 9.79 days. The trend year by year demonstrates that a decreased length of stay is associated with a higher readmission rate. However, if all years are combined, the total reveals overall results with increased readmissions being associated with increased length of stay. Somewhat contrary to other reports, diagnoses, gender and season of admission were found to be only marginally, at best, associated with readmission when looked at as a function of time to readmission. **Conclusion:** Reducing the length of stay in an acute care facility by 25 days leads to the year to year trend of increased readmission rates. Shortening length of stay alone is not associated with either cost savings or better clinical care.

NO. 106

WITHDRAWN

NO. 107

EAST VERSUS WEST: CULTURAL VARIATIONS IN VIDEO GAME PLAY AMONG ADOLESCENTS AND ASSOCIATED VIOLENCE

Poster Presenter:Diana Mungall Robinson, M.D.
Lead Author: Steven R. Phillips, D.O.
Co-Author(s): Michael Heck, D.O., Vishal Madaan, M.D.

SUMMARY:

For the past several decades, there has been an ongoing debate regarding the potential for video games in causing or worsening violence in adolescents. Multiple studies, often stratified by gender, game type and other factors, have suggested the possibility of a reduction in empathy and prosocial behaviors in adolescents participating in extensive play of violent video games. Given the differences between Eastern and Western cultures in social community construct, it has been questioned whether Eastern cultures would be somehow protective against everyday violence that could be attributable to violent video game play. We review the current literature on violence related to video games in terms of cultural variability. In a

comparison of Eastern versus Western culture video game use, increased play with cohorts has been demonstrated in Eastern cultures compared to Western cultures. In addition, a lower likelihood of having private video game systems in adolescents' rooms, preventing an isolative environment in which video games would be played, has also been found. Recent research has compared morality in virtual reality as well as the real world in Chinese and American youths and determined that Chinese youths considered moral character to be more important than their American counterparts, whereas American males found video game violence more acceptable than did Chinese male youths. Further research assessing attitudes toward violence in Chinese youths after violent video game play suggests that there is a correlation between violent video game play and an increased tolerance toward violence, lower empathy and increased aggressive attitude, without increasing violent behavior. On the other hand, a meta-analytic review on the effects of video game violence and resultant violent behavior didn't find any statistical difference between Eastern and Western cultures regarding the rate at which violent video game play increase real-world violence. The research has correlated violent video game play with increased aggression, as well as decreased empathy and prosocial behavior, regardless of whether a person was from an Eastern or Western culture. Future research in this field would be of benefit to learn positive aspects of a video game experience that could be implemented to reduce violence associated with violent video game play, as well as to examine further why it would seem that protective elements of Eastern cultures have not necessarily reduced overall rates of violence following violent video game play.

NO. 108

THE INFLUENCE OF SLEPT HOURS ON FUNCTIONING AND QUALITY OF LIFE IN BIPOLAR DISORDER

Lead Author: García Portilla, Ph.D.
Co-Author(s): Tomas L. de la Fuente, L. García-Ã Ivarez, G. Safont, B. Arranz, M. Sánchez, P. Sierra

SUMMARY:

Background: Sleep impairment has been described as a core mechanism of bipolar disorder (BD) frequently associated with lower global functioning and poorer quality of life (QoL). However, the association between self-reported slept hours and functioning and QoL in bipolar disorder has not been fully investigated. **Objective:** Investigate the influence of hours slept per night on daily functioning and QoL in a sample of euthymic BD patients. **Methods:** This was a naturalistic, multicenter, cross-sectional study of 119 euthymic outpatients with BD according to *DSM IV-TR* criteria. The sample was divided in three sleeper groups according to self-reported hours slept: good sleepers (GS, between 6.5 to 8.5 hours per night), long sleepers (LS, nine or more hours per night) and short sleepers (SL, six or fewer hours per night). Psychometric evaluation was completed with the HDRS, YMRS, HARS, Oviedo Sleep Questionnaire (OSQ) and CRSF-14; cognition was evaluated with the SCIP, functioning was evaluated with the FAST and EEAG, and QoL was evaluated with the SF-36. **Results:** mean age was 46.28 (SD=12.22); 65.5% female; 77% had a bipolar I diagnosis; global severity (ICG-G)=3.15 (SD=1.42); and length of illness was 11.46 (SD=8.96). Sixty percent of the sample was good sleepers, thirty percent long sleepers and ten percent short sleepers. ANCOVA was completed, including age and caffeine consumption as covariates (in the univariate analysis we did not find statistically significant differences between pharmacological therapy and sleeper groups). Statistically significant differences were found in global functioning (GS=16.0 vs. LS=26.7 vs. SS=19.8; f=4.552, p=0.013) and occupational functioning (GS= 4.5 vs. SL=5.9 vs. LS=8.7; f=5.26, p=0.007). No significant differences were found in the SF-36 scale scores among sleeper groups. **Conclusion:** Long sleepers showed lower levels of global functioning and lower levels of occupational functioning compared to the other two groups. The slept hours category did not affect the QoL of the euthymic bipolar patients.

NO. 109

RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED, PHASE 3 STUDY OF ENCENICLINE AS PROCOGNITIVE TREATMENT IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Steven Potkin, M.D.
Co-Author(s): Andrew Ho, M.D., Stephen Brannan, M.D., Nancy Dgetluck, M.S., Dana Hilt, M.D.

SUMMARY:

Background: Patients with schizophrenia suffer from significant cognitive impairments, which significantly affect quality of life, even when positive and negative symptoms are optimally treated. Encenicline is an α7 nicotinic receptor agonist with procognitive effects according to previously

published phase 2 studies. The primary objective of this confirmatory study was to assess the efficacy and safety of once-daily encenicline tablets as a procognitive treatment versus placebo in stable patients with schizophrenia. **Methods:** NCT01714661 was a randomized, double-blind, placebo-controlled, parallel-dosing, 26-week, phase 3 study to evaluate the efficacy and safety of once-daily encenicline tablets (0.9 and 1.8mg) versus placebo. Eligible male and female subjects aged 18–50 with a diagnosis of schizophrenia of at least three years' duration were assigned to treatment in a 1:1:1 ratio, after successful completion of a 14-day single-blind placebo run-in period. The coprimary efficacy endpoints were cognition, as measured by the Consensus Cognitive Battery (MCCB) Neurocognitive Composite Score, and patient function, as measured by the interview-based Schizophrenia Cognition Rating Scale (SCoRS). Both tests were administered during the screening visit (day −14, which preceded the 14-day placebo run-in period) and on days 1 (pre-dose), 28, 56, 84 and 182. The day 1 MCCB and SCoRS scores represent the baseline for each of the efficacy evaluations. Safety and tolerability were determined by clinical and laboratory assessments. **Results:** 1,080 subjects were screened, and 753 subjects were randomized; 46% subjects were enrolled from sites located in the United States. The effects of encenicline versus placebo on cognition (as measured by the MCCB Neurocognitive Composite Score) and function (as measured by SCoRS), as well as safety and tolerability results, will be presented. **Conclusion:** The results of this phase 3 trial support the efficacy and favorable safety and tolerability of encenicline for the treatment of cognitive impairment in schizophrenia. Together with a separate phase 3 study using the identical study design, this is the largest database of procognitive schizophrenia treatment to date.

NO. 110

EFFICACY OF LURASIDONE IN PATIENTS WITH SCHIZOPHRENIA WITH PROMINENT POSITIVE SYMPTOMS: A POOLED ANALYSIS OF SHORT-TERM, PLACEBO-CONTROLLED STUDIES

Lead Author: Steven Potkin, M.D.

Co-Author(s): Michael Tocco, Ph.D., Yongcai Mao, Ph.D., Josephine Cucchiaro, Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Acute schizophrenia is characterized by the presence of active positive symptoms, which may be disruptive to the patient and increase the risk of behavioral disturbance and hospitalization. This pooled, post hoc analysis evaluated the efficacy of lurasidone in patients with acute schizophrenia with prominent positive symptoms. **Methods:** Patient-level data were pooled from five similarly designed, multiregional, randomized, double-blind, placebo-controlled, six-week studies of fixed-dose lurasidone (40, 80, 120 or 160mg/d) conducted in adult patients (age 18–75) with acute schizophrenia. Prominent positive symptoms were defined as baseline Positive and Negative Syndrome Scale (PANSS) positive subscale score greater than baseline PANSS negative subscale score. Treatment response was defined as at least a 30% decrease in PANSS total score at week 6 (last observation carried forward [LOCF]). **Results:** This analysis included 919 patients with prominent positive symptoms (mean age=38.5, 72.3% male) and 613 patients without prominent positive symptoms (mean age=38.3, 74.1% male). Study discontinuation rates were 39.5% for lurasidone and 48.7% for placebo in patients with prominent positive symptoms and 29.5% for lurasidone and 36.2% for placebo in patients without prominent positive symptoms. Based on change from baseline to week 6 in PANSS total score (mixed-model repeated-measures analysis), effect sizes for the lurasidone 40, 80, 120 and 160mg/d dose groups were 0.51, 0.65, 0.44 and 1.09, respectively, for patients with prominent positive symptoms (all $p<0.001$) and 0.29, 0.46, 0.55 and 0.67, respectively, for patients without prominent positive symptoms ($p<0.05$ for 40mg/d, all other $p<0.001$). In patients with prominent positive symptoms, treatment response (at least 30% improvement in PANSS total score) at week 6 LOCF was observed in 29.3% of patients in the placebo group and 48.3%, 46.6%, 43.2% and 64.4% of patients in the lurasidone 40, 80, 120 and 160mg/d dose groups, respectively (with associated number needed to treat [NNT] of 6, 6, 8 and 3, respectively). In patients without prominent positive symptoms, treatment response at week 6 LOCF was observed in 35.7% of patients in the placebo group and 50.0%, 52.1%, 54.5% and 60.4% of patients in the lurasidone 40, 80, 120 and 160mg/d dose groups, respectively (NNT of 7, 7, 6 and 5, respectively). **Conclusion:** In adult patients with schizophrenia presenting with prominent positive symptoms, lurasidone therapy was associated with medium to large treatment effects sizes. Larger effect sizes were observed in patients with prominent positive symptoms compared to patients

without prominent positive symptoms. These results may inform the design of future clinical trials in schizophrenia. This study was supported by Sunovion Pharmaceuticals, Inc.

NO. 111

STRESS REACTIVITY IN THE CONTEXT OF TRAUMA EXPOSURE AND MARIJUANA USE

Lead Author: Vanja Radoncic, B.A.

SUMMARY:

Background: Trauma exposure is associated with increased drug abuse. A mechanism linking trauma and substance abuse is dysregulation of acute stress response. High trauma rates and altered stress responses have been reported in cocaine users, yet little is known about how an interaction between trauma exposure and stress reactivity impacts the factors that influence marijuana use and relapse. Among regular marijuana users, a history of trauma is associated with an increased dysregulation of stress responses, and marijuana is used to relieve stress. **Objective:** This research project aimed to 1) Collect data on trauma exposure in healthy regular marijuana smokers and 2) Compare responses to an acute social stressor such as the Trier Social Stress Test (TSST) in marijuana (MJ) users with and without past trauma exposure, hypothesizing that a group with more trauma exposure (high post-traumatic stress [PTS]) would have more dysregulated stress response compared to the group with less trauma exposure (low PTS) and those with no trauma exposure (NT). **Methods:** Non-treatment-seeking daily MJ smokers (102 males, 23 females) with no current Axis 1 diagnoses (except MJ abuse or dependence) completed the Trauma Assessment for Adults (TAA) and the TSST, a standardized laboratory stressor involving public speaking and mental arithmetic tasks. Stress response was assessed with heart rate, salivary cortisol, and subjective anxiety (State-Trait Anxiety Inventory [STAI], Profile of Mood States [POMS]). Participants also reported baseline depressive symptoms (Beck Depression Inventory [BDI]), emotion dysregulation (Difficulties in Emotion Regulation Scale [DERS]) and impulsivity (Barratt Impulsivity Scale [BIS]). Participants were divided into three groups: high PTS group reporting at least three traumatic events (n=35), low PTS group reporting between one and three events (n=57), and those with no such exposure (n=33). **Results:** The high PTS group had been exposed to 3.1 (SD=1.1) types of trauma and had higher baseline BDI, DERS and BIS scores than the low PTS and NT groups. Also, the high PTS group had the most elevated anxiety levels throughout the TSST (measured with STAI and POMS) and increased heart rate compared to the low PTS and NT groups, with no significant differences in cortisol levels. Overall, the TSST increased heart rate, salivary cortisol and anxiety. **Conclusion:** These initial data indicate that higher levels of trauma exposure were associated with elevated negative affect and greater dysregulation of stress responses, which implies that marijuana smokers with trauma exposure are more sensitive to relapse and marijuana use. Further study is warranted in order to deepen our understanding of ways to improve marijuana treatment by targeting the stress reactivity mechanisms and improving coping skills of marijuana smokers with trauma histories.

NO. 112

DOES METABOLIC MONITORING OF PATIENTS ON ANTIPSYCHOTIC MEDICATION IMPROVE MANAGEMENT?

Lead Author: Mahdi Razafsha, M.D.

Co-Author(s): Yuliet Sanchez-Rivero, Laura Tait, Avjola Hoxha, Rajiv Tandon, Jacqueline A. Hobbs, Stephen Welch

SUMMARY:

Antipsychotic medications are associated with weight gain, diabetes, dyslipidemia, insulin resistance and metabolic syndrome. Metabolic monitoring is a first step to reduce metabolic syndrome. Metabolic monitoring, however, should eventually translate to appropriate actions in order to reduce harm. In an attempt to assess if metabolic monitoring has led to improvements in metabolic management, we conducted a retrospective study and comparison of patients on antipsychotic medications at UF Health Shands Psychiatric Hospital in 2011 and 2014. In the subject group, we reviewed 35 charts in April 2014, and 18 cases met our inclusion criteria. In the control group, we reviewed 68 charts in April 2011 and recruited 19 cases. In order to assess if appropriate steps are taken when encountering metabolic syndrome, we evaluated referrals to primary care providers, prescription of lipid-lowering medications, prescription of antidiabetic medications, prescription of antihypertensive medications, change in diet and exercise, change in type of antipsychotic medication, and referral to weight loss clinics. Our study showed a high rate of metabolic syndrome (about 50%) and obesity (40%, defined by body mass index≥30).

Overall, metabolic monitoring did not improve actions to address metabolic syndrome. However, there were statistically significant improvements in the choice of antipsychotics (with less potential for weight gain) and recommendations for diet and exercise.

NO. 113

LONG-TERM SAFETY AND DURABILITY OF EFFECT OF ARIPIPRAZOLE LAUROXIL IN A ONE-YEAR SCHIZOPHRENIA EXTENSION STUDY

Lead Author: Robert Risinger, M.D.
Co-Author(s): Arielle D. Stanford, Yangchun Du, Jacqueline Zummo, Hassan H. Jamal, Chih-Chin Liu, Amy Claxton

SUMMARY:

Background: Aripiprazole lauroxil (AL; ARISTADA™, Alkermes, Inc.), a long-acting injectable (LAI) antipsychotic, is approved for the treatment of schizophrenia. We report on efficacy and safety outcomes from a one-year long-term AL extension study. **Methods:** De novo subjects with chronic stable schizophrenia who could benefit from switching to a LAI and rollover subjects who had completed a double-blind, 12-week, placebo-controlled study were enrolled (n=478, safety population). De novo subjects received monthly injections of AL 882mg, and rollover (placebo or AL) subjects received monthly injection with either AL 441or 882mg, depending on their assigned treatment in the preceding placebo-controlled study. Subjects who were first assigned to active AL also received daily oral aripiprazole (15mg) for three weeks. The key primary and secondary objectives were to characterize the safety and evaluate the durability of therapeutic effect of AL in subjects with stable schizophrenia. **Results:** Of 478 (de novo [n=242]) enrolled subjects, 462 had evaluable post-baseline data. At baseline, the mean age was 39 (SD=12), 58% were male, 64% were white and the mean PANSS total score was 61 (SD=14). High proportions of subjects received nine or more (76%) or 13 or more (69%) injections of AL. Of the 110 and 368 patients enrolled in the 441 and 882mg study arms, respectively, 32% discontinued in each study arm. Drug-related adverse events (ADRs) were reported in 29 (26%) and 112 (30%) of subjects in the 441 and 882mg arms, respectively. Treatment-emergent adverse events observed in at least five percent of subjects were insomnia (8%) and increased weight (5%). Serious ADRs were reported only in the 882mg arm (three subjects [<1%]). Overall incidence of Parkinsonism and akathisia were seven and five percent, respectively. The majority of patients (77%) gained ≤5kg over 16 months and, at any post-baseline visit, 88 subjects (18%) had a weight increase of at least seven percent. Overall response (≥30% decrease in PANSS total score from baseline to day 365 or CGI-I of 2 or 1) was achieved by 51% of subjects at endpoint. Overall, the mean change from baseline in PANSS total score at study endpoint was −8 (SD=10) and in CGI-S was −0.4 (SD=0.7). The mean reduction in PANSS total score for the placebo to either the 441 or 882mg subject group was −19(SD=15) or −12(SD=12), respectively. **Conclusion:** AL treatment for at least one year demonstrated continued safety and additional therapeutic effect. As most safety extension studies have the limitation of selecting for responders, about half the study subjects were treated de novo. The low dropout of this study supports the high overall safety and tolerability of AL for patients with schizophrenia. Further, the low rates weight gain supports the beneficial metabolic profile of treatment with AL LAI. This study supports continued reduction in symptoms with maintenance AL, with over half of completers meeting response criteria.

NO. 114

SYMPTOM STABILITY IN A 52-WEEK SCHIZOPHRENIA EXTENSION STUDY OF TREATMENT WITH LONG-ACTING INJECTABLE ARIPIPRAZOLE LAUROXIL

Lead Author: Robert Risinger, M.D.
Co-Author(s): Arielle D. Stanford, Yangchun Du, Jacqueline Zummo, Hassan H. Jamal, Chih-Chin Liu, Amy Claxton

SUMMARY:

Background: Aripiprazole lauroxil (AL; ARISTADA™, Alkermes, Inc.), a long-acting injectable antipsychotic, is approved for the treatment of schizophrenia. Clinical stability is a highly desirable treatment outcome, as it can predict better long-term outcomes, including reduced hospitalizations. We assessed symptom stability in schizophrenia patients treated with AL in an efficacy study, as well as the long-term safety extension study. **Methods:** De novo subjects with chronic stable schizophrenia who could benefit from switching to a LAI and rollover subjects who had completed a double-blind, 12-week, placebo-controlled study were enrolled (n=478, safety population). De novo subjects received monthly injections of AL 882mg, and rollover (placebo or AL) subjects received monthly

injection with either AL 441 or 882mg, depending on their assigned treatment in the preceding placebo-controlled study. Subjects who were first assigned to active AL also received daily oral aripiprazole (15mg) for three weeks. The exploratory analysis of the one-year extension study included subjects who met two stability criteria: Positive and Negative Syndrome Scale (PANSS) total score of 80 or more and a score of at least 4 on each of items P2, P3, P6 and G9 simultaneously for 12 continuous weeks. For subjects who were stabilized, remission and relapse rates were assessed using the Schizophrenia Working Group remission criteria (SWGRC). Remission was defined as a PANSS score of at least 3 for each of items P1, G9, P3, P2, G5, N1, N4 and N6 for at least six continuous months. Relapse criteria was defined as an increase of 10 points or more in PANSS total score from the end of the stabilization period. **Results:** The full analysis set contained data from 462 subjects; 396 (86%) subjects reached stabilization within a median time of 85 days, while 66 subjects never met stability criteria. Among 396 stabilized subjects, 383 (97%) remained stable for the entire study; only 39 (10%) relapsed after achieving stabilization, and 233 (60%) achieved symptom remission. Among the 66 subjects who did not meet stability criteria, 30 subjects were not treated for a sufficient period, as they discontinued before day 85. For the other 36 subjects, treatment-emergent adverse events included schizophrenia (17%) and insomnia (11%). Overall, 318 subjects completed the entire study, and 313 (98%) remained stable after achieving stabilization. **Conclusion:** The majority of subjects with schizophrenia who were treated with AL responded and remained stable for at least 52 weeks. As most safety extension studies have the limitation of selecting for responders, about half the study subjects were treated de novo. Nonetheless, over half of the subjects achieved remission.

NO. 115

THE EFFECT OF SOCIAL CONNECTEDNESS AND CONTROLLABILITY OF SUICIDAL THOUGHTS ON NEAR-TERM SUICIDAL IDEATION AND BEHAVIOR

Lead Author: Raquel E. Rose, B.S.
Co-Author(s): Zimri Yaseen, M.D., Jessica Briggs, B.A., Anna Frechette, B.A., Molly Duffy, B.A., Igor Galynker, M.D., Ph.D.

SUMMARY:

Background: In today's world, it is impossible to consider suicide risk without considering the effect of social networks. At present, it is unclear which aspect of social networking is more relevant to suicidal behavior—an individual's connection to their close circle or to society as a whole. In this study, we investigate the relationship between social connectedness to one's individual support network and to society, the ability to control suicidal thoughts, and near-term suicidal thoughts and behaviors. **Methods:** 201 adult psychiatric inpatients at Mount Sinai Beth Israel were assessed for connectedness to their individual network and to society using the Visual Analog Scale for Social Connectedness (VAS). The ability to control suicidal thoughts, as well as the presence of suicidal thoughts and behaviors, was assessed using the Columbia Suicide Severity Rating Scale (C-SSRS). The VAS and C-SSRS were given as a part of a semi-structured interview conducted within 72 hours of the patient's admission to the inpatient unit. The C-SSRS was readministered at follow-up interviews, conducted one to two months following discharge from the hospital (n=137). One-way ANOVA was used to determine the relationship between social connectedness, ability to control suicidal thoughts, and suicidal thoughts and behaviors following discharge. **Results:** Higher levels of connectedness to one's individual support network, but not to society, predicted less severe suicidal ideation and behavior following discharge (p=0.048). However, neither social connectedness to one's individual network nor connectedness to society correlated with the ability to control suicidal thoughts (measured at intake). Controllability of suicidal thoughts also did not significantly predict suicidal ideation and behavior following discharge. **Conclusion:** Unlike connection to society as a whole, social connectedness to one's individual network appears to be associated with future suicidal ideation and behavior. This indicates that social connectedness to one's individual network is an important assessment and treatment target in individuals at risk for suicide.

NO. 116

ANTI-INFLAMMATORY AGENTS IN THE TREATMENT OF BIPOLAR DEPRESSION: A META-ANALYSIS

Poster Presenter:Ron Kakar, M.D.
Lead Author: Joshua D. Rosenblat, M.D.
Co-Author(s): Ron Kakar, Michael Berk, Lars V. Kessing, Maj Vinberg, Bernhard T. Baune, Rodrigo B. Mansur, Elisa Brietzke, Benjamin Goldstein, Roger S. McIntyre

SUMMARY:

Background: Inflammation has been implicated in the risk, pathophysiology and progression of mood disorders and as such has become a target of interest in the treatment of bipolar disorder (BD). Therefore, the objective of the current meta-analysis is to determine the overall antidepressant effect of adjunctive anti-inflammatory agents in the treatment of BD. **Methods:** Completed and ongoing clinical trials of anti-inflammatory agents for BD published prior to May 15, 2015, were identified through searching the PubMed, Embase, PsychINFO and Clinicaltrials.gov databases. Data from randomized controlled trials (RCTs) assessing the antidepressant effect of adjunctive mechanistically diverse anti-inflammatory agents were pooled to determine standard mean differences (SMDs) compared to standard therapy alone. **Results:** Ten RCTs were identified for qualitative review. Eight RCTs (n=312) assessing adjunctive nonsteroidal anti-inflammatory drugs (n=53), omega-3 polyunsaturated fatty acids (n=140), N-acetylcysteine (n=76) and pioglitazone (n=44) in the treatment of BD met inclusion criteria for quantitative analysis. The overall effect size of adjunctive anti-inflammatories on depressive symptoms was −0.40 (95% CI [−0.14, −0.65], p=0.002), indicative of a moderate and statistically significant antidepressant effect. Heterogeneity of the pooled sample was low [I^2=14%, p=0.32]. No manic/hypomanic induction or significant treatment-emergent adverse events were reported. **Conclusion:** Overall, a moderate antidepressant effect was observed for adjunctive anti-inflammatory agents compared to conventional therapy alone in the treatment of BD. The small number of studies, diversity of agents and small sample sizes limited interpretation of the current analysis.

NO. 117

PREDICTORS OF RESPONSE OF A COMPARATIVE TRIAL OF SIX-MONTH BUPRENORPHINE IMPLANTS AND SUBLINGUAL BUPRENORPHINE IN STABLE OPIOID DEPENDENT PATIENTS

Lead Author: Richard N. Rosenthal, M.D., M.A.
Co-Author(s): Michelle R. Lofwall, M.D., Sonnie Kim, Pharm.D., Michael Chen, Ph.D., Katherine L. Beebe, Ph.D., Frank J. Vocci, Ph.D.

SUMMARY:

Background: A recent multicenter, double-blind, double-dummy, non-inferiority trial compared six-month buprenorphine implants (BI) to daily sublingual buprenorphine (SLBPN) among 177 stable outpatients maintained on 8mg or less of SLBPN. The primary efficacy endpoint was the proportion of responders (at least four of six months without evidence of illicit opioid use by urine test and self-report). The responder rate was 96.4% for BI and 87.6% for SLBPN (difference=0.088). The 95% CI for the rate difference (0.009, 0.167) demonstrated non-inferiority. Statistical superiority in favor of BI (p=0.034) was also shown. This poster reports on a number of post hoc analyses assessing potential predictors of clinical response in both treatment arms. **Methods:** Post hoc analyses were conducted with the intent-to-treat sample to determine if any baseline demographic or clinical factors such as age, gender, primary opioid of abuse, sublingual buprenorphine dose and use of supplemental buprenorphine predicted response to treatment. **Results:** No variable was statistically significant as a predictor of response in either treatment group. There were trends toward increased response effect (0.242, p=0.08, 95% CI [0.048, 1.21]) in the BI group among participants older than 36 years and a female versus male effect (7.42, p=0.0625, 95% CI [0.09, 62.06]) There were no trends in the SLBPN group. **Conclusion:** Although the study was not powered to detect predictors of response, the results are consistent with previous reports among opioid-dependent samples receiving buprenorphine formulations, suggesting that older age is a positive predictor of treatment response. This research was supported by Braeburn Pharmaceuticals.

NO. 118

A CONCIERGE MODEL OF CAE PLUS LONG-ACTING INJECTABLE ANTIPSYCHOTIC IN INDIVIDUALS WITH SCHIZOPHRENIA AT RISK FOR NONADHERENCE AND HOMELESSNESS

Lead Author: Martha Sajatovic, M.D.
Co-Author(s): Jennifer B. Levin, Ph.D., Curtis Tatsuoka, Ph.D., Kristin A. Cassidy, M.A., Edna Fuentes-Casiano, M.S.S.A., Jamie Cage, M.S., Luis Ramirez, M.D., Patrick Runnels, M.D., David Hahn, M.D.

SUMMARY:

Background: People with serious mental illness (SMI) often have difficulty with medication adherence, which contributes to illness relapse and poor outcomes. Among homeless individuals, rates of highly symptomatic schizophrenia are high. Long-acting injectable antipsychotic medication (LAI) can be a practical treatment option to optimize

adherence for high-risk groups such as homeless individuals with SMI. We have developed a Concierge Model Customized Adherence Enhancement (CCAE) approach that is practical to deliver in standard clinical settings and can improve outcomes in homeless individuals with SMI. This study tested CCAE, which can be delivered by social workers in community settings, combined with the LAI paliperidone palmitate. **Methods:** This six-month prospective trial of CCAE+LAI in 30 recently homeless individuals with schizophrenia or schizoaffective disorder assessed medication adherence using the Tablets Routine Questionnaire (TRQ), LAI injection frequency and psychiatric symptoms by the Positive and Negative Syndrome Scale (PANSS), and global psychopathology by the Clinical Global Impressions Scale (CGI). Standardized measures of extrapyramidal symptoms included the Simpson Angus Scale (SAS), Barnes Akathisia Scale (BAS) and Extrapyramidal Symptoms Scale–Abbreviated Version (ESRS-A). **Results:** In interim results (n=26/30, 87% of target sample with enrollment to be completed December 2015), mean age was 43.31 (SD=9.09), and participants were mainly minorities (84.6% African American), mainly single/never married (76.0%) and had a mean of 11.4 years of education. Baseline rate of substance abuse within the past year was 38.5%, and rate of incarceration within the past six months was 26.9%. Two individuals (7.6 %) terminated the study prematurely. CCAE+LAI was associated with good adherence to LAI (100% in individuals who remained on the study drug at six months) and a trend for improvement in TRQ indicating change from 48% missed drug at baseline to 5.4% at six months (p=0.09). There were significant reductions in PANSS (p=0.04) and a trend for improvement in CGI (p=0.05). There were no overall significant changes on SAS, BAS or ESRS at six months, although eight percent (n=2/26) experienced at least mild akathisia. **Conclusion:** While interpretation of findings must be tempered by the methodological limitations, CCAE-L appears to be associated with improved symptoms and functioning in homeless/recently homeless individuals with schizophrenia/schizoaffective disorder. While side effects may limit tolerability in some individuals and not all individuals will remain engaged, paliperidone palmitate plus a patient-centered behavioral approach can improve outcomes for some high-risk groups with SMI. Funding for this project was provided by the Reuter Foundation, the Reinberger Foundation, the Woodruff Foundation and a grant from Janssen Scientific Affairs, LLC (R092670SCH4031).

NO. 119

NEUROLOGICAL AND PSYCHIATRIC COMORBIDITIES ASSESSMENT IN THE PRISM II STUDY OF DEXTROMETHORPHAN/QUINIDINE FOR TREATMENT OF PSEUDOBULBAR AFFECT

Lead Author: William Sauve, M.D.
Co-Author(s): Khody Farahmand, David Alexander, Andrew Cutler, Stephen D'Amico, Flora Hammond, Richard Zorowitz, Andrea Formella, JoÃ£o Siffert

SUMMARY:

Background: Pseudobulbar affect (PBA) can occur secondary to certain neurological diseases or brain injury and is characterized by frequent, uncontrollable laughing/crying episodes. While PBA is distinct from mood disorders, in which feelings of happiness or sadness can also lead to laughing or crying, persons with PBA may often have psychiatric comorbidities (e.g., depression or anxiety). A recent study (PRISM II) evaluated the effectiveness of dextromethorphan/quinidine (DM/Q) for the treatment of PBA in persons with dementia, stroke and traumatic brain injury (TBI); we assessed the prevalence of comorbid neurological and psychiatric disorders among PRISM II patient cohorts. **Methods:** Patients with PBA secondary to either dementia, stroke or TBI with a Center for Neurologic Studyâ€'Lability Scale (CNS-LS) score of 13 or more were enrolled and treated with DM/Q 20/10mg BID, open-label for 90 days. Persons with severe dementia, stroke within three months prior, penetrating TBI, severe depressive disorders or psychotic disorders were excluded. Concomitant medications for neuropsychiatric conditions were allowed, provided doses were stable, and there were no contraindications to DM/Q use. Baseline assessments included PBA and depression ratings (CNS-LS, episode count and PHQ-9), concomitant diseases, and medications. **Results:** A total of 367 patients were enrolled (n=120 TBI, n=113 stroke, n=134 dementia). 70.8% were receiving at least one psychiatric medication at baseline, most commonly antidepressants (48.5%), antipsychotics (17.7%) and sedatives/anxiolytics/hypnotics (33.8%). A total of 57.5% reported a depression diagnosis at baseline, including 61.7%, 50.4% and 59.7% of the TBI, stroke and dementia populations, respectively. Other reported CNS diagnoses included anxiety disorders (42.2% [50.0% TBI, 36.3% stroke and 40.3% dementia, respectively], sleep disorders (34.1%

[40.8%, 29.2% and 32.1%]), cognitive impairment (29.7% [27.5%, 19.5% and 40.3%]), headache disorder (20.4% [37.5%, 15.9% and 9.0%]), seizures (14.7% [17.5%, 16.8% and 10.5%]), and post-traumatic stress disorder (4.6% [13.3%, 0.9% and 0.0%]). The baseline mean PHQ-9 score was 13.5 (13.9, 13.4 and 13.2, respectively), suggesting moderate depression. **Conclusion:** Persons enrolling in this study of DM/Q for treatment of PBA subsequent to TBI, stroke or dementia often had other CNS comorbidities, most commonly depression and anxiety disorders. These findings underscore the importance of considering both neurologic and psychiatric causes in the differential diagnosis of affective symptoms such as uncontrollable laughing and crying. The fact that over 70% of our study population was already being treated for psychiatric comorbidity suggests that specific PBA treatment may still be required.

NO. 120

TOTAL CHOLESTEROL IS POSITIVELY CORRELATED WITH SCORES ON THE NIH TOOLBOX COGNITIVE TEST BATTERY IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Ashwini Saxena, M.D., Ph.D.
Co-Author(s): Satyajit Mohite, Ramandeep S. Kahlon, Ruchir Patel, Titilayo Makanjuola, Sumana Goddu, Osarhiemen Aimienwanu, Hema Venigalla, Michelle Malouta, Allison Engstrom, Olaoluwa O. Okusaga

SUMMARY:
Background: Cognitive impairment is a key feature of schizophrenia and remains an unmet need in the management and rehabilitation of patients with schizophrenia. Recent analysis of data from the Clinical Antipsychotic Trial of Interventional Effectiveness (CATIE) study indicated that elevated plasma cholesterol was associated with better cognitive performance in schizophrenia. However, the field has yet to come to a consensus regarding the relationship between cholesterol and cognition in patients with schizophrenia. This study evaluated the association of total plasma cholesterol with cognition in a sample of patients with schizophrenia. **Methods:** We recruited 17 adult patients with schizophrenia, diagnosed with the Mini International Neuropsychiatric Interview, version 5. Fasting plasma total cholesterol was measured in all patients. Cognitive function was assessed with the NIH toolbox cognitive battery (picture vocabulary [PV], flanker inhibitory control [FL], list-sorting working memory [LS], dimensional change card sort [DC], pattern comparison process speed [PC], picture sequence memory [PS] and oral reading recognition [OR]). We calculated Spearman's rank correlations between the cognitive measures and cholesterol. **Results:** Plasma total cholesterol was correlated with OR, which assesses language (ρ=0.80, $p<0.01$), DC, which assesses cognitive flexibility (ρ=0.60, p=0.008), and PS, a test of episodic memory (ρ=0.49, p=0.046). **Conclusion:** The results from our preliminary investigation indicate that elevated plasma cholesterol maybe beneficial for cognitive function in patients with schizophrenia. Longitudinal studies are required to further evaluate the association between cholesterol and cognition in schizophrenia.

NO. 121

TREATMENT OF ADDITION IN ALZHEIMER'S DISEASE: THE EFFICACY OF RATIONALE FOR COMBINATION THERAPY WITH GALANTAMINE AND MEMANTINE

Lead Author: Luisa C. Schmidt, M.D.
Co-Author(s): Julio Zarra, M.D.

SUMMARY:
Background: Considering the moderate clinical state of AlzheimerÂ´s disease, without therapeutic response or poor therapeutic response with an anti-dementia agent, we try to improve the therapeutic response with a two-drug association. **Methods:** The study included 954 patients who were enrolled in an observational, multicenter, open-label and prospective study to receive 16mg/day of galantamine and 30mg/day of memantine for 24 months. **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), Clinical Global Impression Scale (CGI) and UKU scale of adverse effects. Taking into account the efficacy, safety and adverse events of the treatment over 24 months, the final results of the study showed that galantamine with the addition of memantine improved cognition, behavioral symptoms and the general well-being of patients with cognitive impairment (i.e., 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 that the association of memantine and galantamine in Alzheimer's disease treatment improves cognition, behavioral symptoms and the general state recognized as neurocognitive disorder.

NO. 122

GENDER DIFFERENCES IN MENTAL HEALTH AMONG 10- TO 14-YEAR-OLD CHILDREN WHO WERE VERY LOW WEIGHT AT BIRTH

Poster Presenter:Maria Fe Bravo-Ortiz, M.D., Ph.D.
Lead Author: Maria Serrano-Villar, M.S.
Co-Author(s): Alfonso Coronado, Paula Barga, Margarita Alcamí, Arancha Ortiz, Susana Ares, Celia Díaz, Belén Saenz, Félix OmeÃ±aca, María Fe Bravo

SUMMARY:

Objective: This study examined the mental health among 10- to 14-year-old boys and girls who were born with very low birth weight (VLBW, <1,500g). **Methods:** Participants were 10- to 14-year-old children who were born at the Hospital Universitario la Paz in Madrid with very low weight at birth (<1500g). Participants and their families reported on children's externalizing, internalizing and prosocial behavior using the Strengths and Difficulties Questionnaire (SDQ). Children who showed an abnormal SDQ score on the total difficulties subscale or who had psychiatric history were also assessed using the Kiddie Schedule for Affective Disorders and Schizophrenia–Present and Lifetime Version (K-SADS-PL). **Results:** Most children appear to be functioning well at this age, though boys seem to be at higher risk for hyperactivity and peer problems than girls, and girls seem to be more prosocial and at higher risk for emotional problems than boys. We also studied the correlations by gender between children's SDQ scores and biomedical variables such as birth weight, gestational age, head circumferences and Apgar scores. Surprisingly, girls showed much more significant associations in the expected direction between these variables than boys, who did not show significant associations. When the questionnaire was rated by parents instead of children, the emotional and behavioral scores were much worse. Thirty-eight percent of children complied with criteria to be assessed using the K-SADS (no significant differences by gender were found), and very few of them met the diagnostic criteria for at least one psychiatric disorder. **Conclusion:** Being born with very low birth weight seems to be related to the emotional and behavioral functioning that these children appear to show between 10 and 15 years later, and these associations seem to be moderated by gender.

NO. 123

PRIVACY DENIED: EXPLORING THE TENSIONS BETWEEN PROCEDURAL JUSTICE AND RESPECT FOR PRIVACY AT THE CONSENT AND CAPACITY BOARD

Poster Presenter:Janooshsheya Balasundaram, M.D.
Lead Author: Kathleen Sheehan, M.D., Ph.D.
Co-Author(s): Abel Ickowicz, Maria McDonald

SUMMARY:

In Ontario, the legal and mental health care systems intersect at Consent and Capacity Board (CCB) hearings, where psychiatric patients can appeal involuntary detention and findings of incapacity by physicians. As the CCB is an independent tribunal and its hearings are considered legal proceedings, transparency and accountability are paramount; therefore, CCB hearings are open to the public. When either the physician or patient who have been party to the proceedings request details of the decision, Reasons for Decisions documents are written by the presiding members of the CCB. Historically, these documents were typically only accessed by those involved in the hearing or lawyers seeking information on past decisions. Practically, this would have required interested individuals to obtain and review paper copies of each document. However, with the advent of the Internet, Reasons for Decisions documents are now published and easily accessible on the Canadian Legal Information Institute (CanLII) website. Although the CanLII website indicates that personal identifiers, such as names, are omitted to protect patient privacy, these documents often include numerous details about the patient: the initials of the patient and their family members; demographic information and social history including age, sex, hometown, occupation and family structure; and clinical information such as the hospital where they are being treated, diagnoses and management of psychiatric and medical conditions, and substance use. We conducted an empirical study investigating the patient information included in Reasons for Decisions. We reviewed 133 consecutive appeals of incapacity under the Ontario Health Care Consent Act and involuntary detention under the Ontario Mental Health Act, where Reasons for Decisions were requested and therefore published by the CCB on the CanLII website. In all cases, details were likely sufficient for the patient to be individually identified. A quantitative analysis of the information published will be presented. While disclosure for proceedings is permissible under the Personal Health Information Privacy Act, we feel that the level of detail published is not necessary for legal transparency and that it is

of particular concern given the vulnerability of this population, with many patients appealing findings of incapacity about medical decision making. We question whether patients involved in CCB hearings are fully advised of the possibility that their detailed information could be posted on the web and easily accessed by third parties and whether these patients are able to understand and appreciate the consequences of the publication of a Reasons for Decision document. Informed by the ethical values of respect for the person, nonmaleficence, procedural justice and substantive justice, we propose that the tribunal consider new guidelines relevant to online publication to better protect the privacy of this potentially vulnerable population.

NO. 124

FACTORS AFFECTING PSYCHIATRIC DISORDERS IN OFFSPRING OF PARENTS WITH BIPOLAR DISORDER IN SOUTH KOREA

Lead Author: Se-Hoon Shim, M.D., Dr.P.H.
Co-Author(s): Han-Yong Jung, M.D., Ph.D., Sang-Woo Hahn, M.D., Ph.D., Seon-Cheol Park, M.D., Ph.D., Soyoung Irene Lee, M.D., Ph.D., Jeongjae Bak, M.D., Byungjoo Lee, M.D., Chaeri Kim, M.D.

SUMMARY:

Background: Offspring of bipolar parents are vulnerable to developing affective and other psychiatric disorders. The identification of demographic and clinical factors for psychiatric disorders among children and adolescents of bipolar adults could improve preventive and treatment strategies. This study investigated the factors of mental disorders in the offspring of parents with bipolar disorder. **Methods:** Subjects included 148 child and adolescent offspring (age 6.0–18.9) from 100 nuclear families with at least one parent with bipolar disorder. Probands, offspring and biological co-parents were interviewed using a semi-structured diagnostic interview, and the offspring were evaluated using the Korean version of the Kiddie-Schedule for Affective Disorders and Schizophrenia-Present and Lifetime Version (K-SADS-PL) and the Korean Childhood Trauma Questionnaire (K-CTQ). **Results:** Seventy-six (51.3%) of 148 child and adolescent offspring had one or more mental disorders. Of 76 offspring, 28 (36.8%) had depressive disorder and 18 (12.2%) had bipolar disorder (three type, six type II, 10 NOS). The offspring with mental disorders were significantly older and had significantly higher K-CTQ scores. Their mothers' ages were significantly lower at the time of their birth. Their biological co-parents had significantly more depressive disorder, alcohol use disorder and anxiety disorder. Offspring diagnosed with bipolar disorder were also significantly older and had more comorbid disorders (anxiety disorders, ADHD and disruptive behavior disorder). In the multivariate logistic regression, variables predictive of psychiatric disorders were older offspring age, younger mother age at birth and higher K-CTQ score. Variables associated with bipolar disorder in regression analysis were older offspring age and higher rates of comorbid disorders. **Conclusion:** Offspring of parents with bipolar disorder are at high risk for mental disorders. Factors affecting psychiatric disorders in offspring of parents with bipolar disorder in South Korea are lower mother age at the time of their birth, older age and higher K-CTQ score. Furthermore, these findings could have implications for the diagnosis and treatment of psychopathology among offspring of bipolar disorder parents.

NO. 125

THE NORMALIZATION OF BRAIN F-18-FDG HYPOMETABOLISM FOLLOWING ELECTROCONVULSIVE THERAPY IN A WOMAN WITH TREATMENT-RESISTANT DEPRESSION: A CASE REPORT

Lead Author: Se-Hoon Shim, M.D., Dr.P.H.
Co-Author(s): Han-Yong Jung, M.D., Ph.D., Sang-Woo Hahn, M.D., Ph.D., Seon-Cheol Park, M.D., Ph.D., Soyoung Irene Lee, M.D., Ph.D., Ki-Chung Paik, M.D., Ph.D., Jeongjae Bak, M.D., Byungjoo Lee, M.D., Chaeri Kim, M.D.

SUMMARY:

Major depressive disorder, especially in later life, has heterogeneous clinical characteristics and treatment responses. For symptomatology, psychomotor retardation, lack of energy and apathy tended to be more common in people with late-onset depression (LOD). Several studies of late-life depression found late-life depression represents an underinvestigated area, and its etiology and endophenotype remain unclear. In spite of recent advances in psychopharmacological treatments, 20–30% of patients with mood disorders experience inadequate responses to medication, often resulting in a trial of electroconvulsive therapy (ECT). However, the therapeutic mechanism of ECT is still unknown. By using F-18-fluorodeoxy-D-glucose positron emission tomography-computed tomography (F-18-FDG PET/CT), we can obtain the status of brain metabolism of patients with neuropsychiatric

disorders and its change during psychiatric treatment course. In this case report, we introduce a 55-year-old female patient who suffered psychotic depression that was treatment-resistant during a pharmacological approach. Several antidepressants and atypical antipsychotics were applied, but there was no improvement in her symptoms. The patient represented not only depressed mood and behaviors but also a deficit in cognitive functions. We found decreased diffuse cerebral metabolism in her brain FDG PET/CT image. FDG PET/CT scans were performed with using a Biograph mCT 128 scanner (Siemens Health care, Knoxville, TN). The patient fasted for six hour before the scans. She was intravenously injected with 185 MBq of FDG approximately 60 minutes before the imaging. Her blood glucose level was under 150mg/dL before FDG injection. The patient was stable for 30 minutes prior to FDG injection and in the subsequent uptake phase. Each PET/CT scan was acquired from the vertex of the skull to the skull base for 10 minutes. After CT scanning, a PET scan was performed in the three-dimensional mode. PET images were reconstructed with an iterative reconstruction algorithm with attenuation correction. By ECT, the patient's symptoms cleared, and as evidenced by another brain PET image, which was taken seven weeks after the last ECT course, the metabolism of her brain was normalized. By comparing the before and after images, the effect of ECT in brain metabolism was obtained and could be evaluated. To understand the effect of ECT, more patients with unipolar and bipolar depression treated by ECT should be evaluated by PET images before and after the ECT in further studies.

NO. 126
WITHDRAWN

NO. 127
COMPARABLE NEUROPSYCHIATRIC SAFETY OBSERVED WITH DEUTETRABENAZINE TREATMENT AND PLACEBO IN PATIENTS WITH HUNTINGTON DISEASE (FIRST-HD)

Lead Author: Victor Sung, M.D.
Co-Author(s): Daniel Claassen, M.D., Mary Edmondson, M.D., Samuel Frank, M.D., David Oakes, Ph.D., David Stamler, M.D., Claudia Testa, M.D., Ph.D.

SUMMARY:
Objective: Assess the neuropsychiatric safety and tolerability of deutetrabenazine in the treatment of chorea associated with Huntington disease (HD). **Background:** Psychiatric symptoms are a major concern in patients with HD through all stages of the disease. Inhibition of vesicular monoamine transport by tetrabenazine reduces chorea; however, there is concern that this is associated with depression/depressive symptoms. Deutetrabenazine is a novel molecule containing deuterium, a naturally occurring, non-toxic form of hydrogen. Deuterium substitution in this molecule extends active metabolite half-lives, enabling the use of lower and less frequent drug doses to safely achieve efficacy. Deutetrabenazine significantly reduced chorea of HD as assessed by the total maximal chorea (TMC) score ($p \leq 0.0001$) and total motor score ($p=0.0023$) of the Unified Huntington Disease Rating Scale (UHDRS) and was generally well tolerated. **Methods:** First-HD was a double-blind, placebo-controlled, parallel-group study in which 90 patients with HD were randomized 1:1 to deutetrabenazine treatment or placebo. There was a titration period (weeks 1–8) and a maintenance period (weeks 9–12). The primary endpoint was change in TMC from baseline to maintenance therapy. Neuropsychiatric safety was assessed using the Hospital Anxiety and Depression Scale (HADS), Columbia Suicide Severity Rating Scale, Epworth Sleepiness Scale, Montreal Cognitive Assessment, and UHDRS Behavior Component subscores. **Results:** Incidence of neuropsychiatric adverse events (AEs) in deutetrabenazine-treated patients was similar to or lower than in the placebo group. Two patients (4.4%) treated with deutetrabenazine reported at least one depression-related AE, compared to three patients (6.7%) in the placebo group. One patient (2.2%) in each group reported anxiety. Deutetrabenazine treatment did not increase depression or anxiety as measured by the HADS. One patient given placebo (2.2%) reported suicidal ideation, compared to none in the deutetrabenazine group. Increased somnolence was detected in the deutetrabenazine group (11.1%) compared to the placebo group (4.4%). Deutetrabenazine treatment did not worsen mood, apathy, self-esteem, compulsion, irritability, aggression, suicidal ideation, hallucinations or delusions compared to placebo. **Conclusion:** Deutetrabenazine treatment provided motor benefits and did not increase the rate of neuropsychiatric AEs in patients with HD over 12 weeks compared to placebo. Deutetrabenazine did not worsen anxiety, depression/depressive symptoms, or suicidal ideation or behavior compared to placebo.

NO. 128

DEPRESSION AND SOCIAL COGNITION IN SCHIZOPHRENIA

Lead Author: Jung Sung Il

Co-Author(s): Jungmin Woo, M.D., Ph.D., Jonghun Lee, M.D., Ph.D., Tae Young Choi, M.D., Ph.D., Hyuk Lee, M.D., Kwang-Hun Lee, M.D., Ph.D.

SUMMARY:

Objective: Social cognition deficit have been evidenced in schizophrenia patients. However, the relationship between social cognition and specific symptoms of schizophrenia was still controversial, especially negative symptoms. In addition, depression is often comorbid with schizophrenia. However, there has been relatively little information in the literature regarding the effect of comorbid depression on the social cognition of schizophrenia patients. This study evaluated the influence of negative symptoms and depression on the social cognition of schizophrenia patients. **Methods:** Inpatients (n=49) and outpatients (n=70) with schizophrenia were recruited from three institutions (Department of Psychiatry, Catholic University of Daegu School of Medicine; Department of Psychiatry, Keimyung University Dongsan Medical Center; Department of Psychiatry, Bugok National Hospital). According to the presence of depression and negative symptoms, participants were divided into four groups (group 1: with negative symptoms and depression, n=38 [31.9%]; group 2: with negative symptoms, without depression, n=58 [48.7%]; group 3: without negative symptoms, with depression, n=11 [9.2%]; group 4: without negative symptoms or depression, n=12 [10.1%]). Depression was defined as a score of 14 or more on the Beck Depression Inventory, and the presence of negative symptoms was defined as a score of 17 or more on the negative symptom subscale of the Positive and Negative Syndrome Scale (PANSS). All participants carried out the eye task that evaluates social cognition. Independent sample T-test was conducted to compare the eye task score of each group. **Results:** The study group consisted of 71 males (59.7%) and 48 females (40.3%). Their mean age was 42.15 (SD=12.2). Their mean duration of illness was 13.4 years (SD=0.7), and their mean number of episode was 4.02 (SD=4.28). In the eye task, which evaluates social cognition, group 3 scored significantly lower score than group 1 (group 1: mean=21.14, SD=7.01; Group 3: mean=16.18, SD=6.16, p=0.04). However, there was no significant difference between other groups. **Discussion:** In schizophrenia patients with less severe negative symptoms, there was lower social cognition with comorbid depression than without comorbid depression. A cognitive dysfunction, especially inattention, in depression is postulated as the cause. In addition, it is suggested that comorbid depression in schizophrenia could be a factor affecting the social cognition deficit of schizophrenia independent of negative symptoms. This study assessed only one scale of social cognition and a relatively small sample size, especially in the depression groups. Future studies will be conducted with more sample size and need to include social function assessment scales.

NO. 129

LURASIDONE FOR MAJOR DEPRESSIVE DISORDER WITH MIXED FEATURES: EFFECT OF IRRITABILITY

Poster Presenter:Antony Loebel, M.D.

Lead Author: Alan C. Swann, M.D.

Co-Author(s): Joyce Tsai, Ph.D., Yongcai Mao, Ph.D., Andrei Pikalov, M.D., Ph.D., Antony Loebel, M.D.

SUMMARY:

Background: Major depressive disorder (MDD) with mixed features has recently been recognized as a diagnostic subtype in the *DSM-5*. In patients with unipolar major depression in the NIMH Collaborative Depression study, irritability/anger was found to be a clinical marker for a severe, chronic and disabling form of MDD. Judd and colleagues defined the criterion for irritability/anger as a severity rating of at least 2 (mild) on the irritability/anger item on the Schedule for Affective Disorders and Schizophrenia Interview. In this post hoc analysis of a six-week trial of lurasidone in patients with a diagnosis of MDD with mixed features (NCT01421134), we examine the prevalence of irritability and its impact on treatment response. **Methods:** Patients meeting *DSM-IV-TR* criteria for unipolar MDD with a Montgomery-Åsberg Depression Rating Scale (MADRS) total score of at least 26 who presented with two or three protocol-defined manic symptoms were randomized to six weeks of double-blind treatment with either lurasidone 20–60mg/d (n=109) or placebo (n=100). To evaluate the efficacy of lurasidone in patients presenting with irritability at study baseline, we defined irritability as a score of at least 2 on both the Young Mania Rating Scale (YMRS) irritability item (#5) and the disruptive-aggressive item (#9). Baseline to week 6 changes in MADRS total score (primary) and Clinical Global Impression, Severity Scale (CGI-S; key secondary)

and YMRS items 5 and 9 were analyzed using a mixed model for repeated measures analysis for subgroups with and without irritability. **Results:** Irritability was present at baseline in 20.7% of patients and was not associated with difference in total MADRS score (MADRS total score, 34.1 with vs. 33.1 without irritability) or CGI-S (4.6 with vs. 4.5 without irritability). Treatment with lurasidone was associated with significant week 6 change versus. placebo in MADRS total score for both the irritability group (−22.63 vs. −9.47, p<0.0001, effect size [ES]=1.41) and the non-irritability group (−19.91 vs. −13.80, p<0.0001, ES=0.66). Lurasidone was also associated with improvement on the CGI-S for both the irritability group (−2.01 vs. −0.70, p=0.0002, ES=1.22) and the non-irritability group (−1.78 vs. −1.31, p=0.0067, ES=0.45). In the irritability group, treatment with lurasidone was associated with significant week 6 change versus. placebo in in both the YMRS irritability item (−1.38 vs. −0.70, p=0.0012, ES=1.04) and disruptive-aggressive item (−0.99 vs. −0.32, p=0.0002, ES=1.19). **Conclusion:** In this post hoc analysis of a randomized, placebo-controlled, six-week trial, treatment with lurasidone significantly improved depressive symptoms in patients with MDD with mixed features who presented with irritability. Symptoms of irritability also showed significant improvement. This research was sponsored by Sunovion Pharmaceuticals Inc.

NO. 130

USE OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION IN ECT-RESISTANT MAJOR DEPRESSION: A CASE SERIES

Lead Author: Daniel Drew Tarman, M.D., M.Eng.
Co-Author(s): Marc Capobianco, M.D.

SUMMARY:

Background: Major depressive disorder (MDD) is frequently resistant to multiple modes of treatment, including several medication classes and therapy modalities. For patients with treatment-resistant depression (TRD), electroconvulsive therapy (ECT) is considered the most effective next step in management. However, when patients fail ECT treatment due to either non-response or adverse side effects, there is no definitive alternative. Repetitive transcranial magnetic stimulation (rTMS) is an alternative intervention for TRD, but generally has a lower response rate compared to ECT. However, it is noninvasive and has very few adverse effects. Therefore, it has filled a niche for the ECT-averse, but its use for ECT-resistant depression has not been thoroughly studied. **Case:** This study examined three patients diagnosed with MDD who all failed multiple medication trials, right unilateral (RUL) and bilateral (BL) ECT, but responded to treatment with rTMS with a 50% or greater reduction in symptoms as rated by their MADRS scores. **Conclusion:** All three patients showed minimal response to standard treatment with both RUL and BL ECT and had to discontinue ECT due to cognitive side effects. For these patients, rTMS was better tolerated and more effective than ECT in treating their depressive symptoms. One common thread between the patients was the presence of multiple psychiatric diagnoses with double depression (MDD and dysthymia) and combat-related PTSD. This case series hopefully adds to the preliminary literature that is demonstrating the effectiveness of rTMS in ECT-resistant MDD. At this time, more rigorous research is needed to determine the role of rTMS therapy in the treatment algorithm for treatment-resistant depression.

NO. 131

CASE SERIES OF DEEP REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION TO THE MEDIAL PREFRONTAL AND ANTERIOR CINGULATE CORTICES AFTER H1 FAILURE

Lead Author: Aron Tendler, M.D.
Co-Author(s): Elyssa Sisko, B.A., Mark DeLuca, M.D., Laura DeLuca, M.D., Noelia Rodriguez, M.A., Sky Corbett Methott, B.A., Jacqulynn Sutton, B.A.

SUMMARY:

Background: Deep repetitive transcranial magnetic stimulation (dTMS) with the commercially available H1 coil stimulates the left dorsolateral prefrontal cortex (DLPFC) and, to a lesser degree, the right dorsolateral prefrontal cortex, resulting in an antidepressant remission in fewer than 50% of patients with treatment-resistant depression. Although the efficacy is superior to pharmacological interventions, it does not compare to electroconvulsive therapy (ECT). A possible explanation for the current ceiling in efficacy of TMS compared to ECT is the fact that, currently, TMS is targeted at the DLPFC compared to the more general and deeper stimulation achieved by ECT. Left DLPFC stimulation and right DLPFC inhibition are the only two TMS targets that have been systematically investigated for the treatment of depression, yet these areas are only a small fraction of the areas involved in mood regulation. The dorsomedial prefrontal cortex and underlying anterior cingulate

cortex are particularly attractive targets based on functional imaging, connectivity and lesion studies. We elected to utilize the H7 dTMS coil placed over the medial prefrontal cortex. This coil can reach 4cm beneath the surface of the skull and stimulate the medial prefrontal, orbitofrontal and anterior cingulate cortices directly. **Methods:** Twelve severely depressed patients without current obsessive-compulsive disorder or post-traumatic stress disorder who failed to respond to the H1 dTMS coil were treated with the H7 dTMS coil. dTMS was administered 4cm anterior to the motor strip at 100% of the motor threshold of the foot, 20HZ, two-second stimulation, 20-second inter train interval for a total of 2,000 pulses. Evaluations included the Beck Depression and Anxiety Inventories (BDI, BAI), Patient Health Questionnaire (PHQ) and Clinician's Global Impression (CGI) during psychiatric evaluations. **Results:** Six of the 12 patients achieved remission with medial stimulation with H7. Of the remaining six, one patient remitted and one responded with combined daily H1 left DLPFC stimulation and H7 medial stimulation, and one patient remitted with combined daily H1left DLPFC stimulation, H7 medial PFC stimulation and right DLPFC inhibition with H7. The final three treatment failures elected to not try treatment with combinations of coils. **Conclusion:** dTMS with the H7 coil over the medial prefrontal, medial orbitofrontal and anterior cingulate cortices represents an alternative attractive target for the treatment of severely depressed patients and warrants further investigation. Combining treatment targets in non-responders is likely to achieve higher remission rates.

NO. 132

PORTRAYAL OF ADDICTION IN *THE NEW YORK TIMES* 1980–2009

Lead Author: Andrew N. Tuck, B.Sc.
Co-Author(s): Vivek Datta, M.D., M.P.H.

SUMMARY:

Background: Social and medical conceptions of substance use and addiction have evolved considerably in the United States over the last three decades. Changes in popular understandings of addiction can be observed by analysis of archived editions of *The New York Times*. **Methods:** A bibliometric analysis of the word "addiction" in editorials and articles published in *The New York Times* between 1980 and 2009 was performed using the newspaper archive search engine ProQuest. Core themes were identified and articles classified by theme. **Results:** Core themes emerged in how addiction was presented, primarily as crime, metaphor, social problem, cultural phenomenon and disease. There was a significant increase in coverage of addiction in the *New York Times* from 1985 to 1989 as the war on drugs ramped up. During this period, there was an increasing portrayal of addiction as disease as psychiatry remedicalized. Addiction typically referred to drug addiction; however, behavioral addictions were also described as possible legitimate diseases even in the 1980s. Addiction was frequently used as metaphor, often with negative connotations. There was a decline in coverage of addiction in the first half of the 1990s. By the 2000s, addiction was most commonly described as a disease rather than a crime or social problem. **Conclusion:** The portrayal of addiction in *The New York Times* has seen the triumph of the disease model and a biologized view of addiction to describe not only substance abuse but also behavioral addictions, reflecting shifting attitudes. At the same time, addiction continues to be used as a metaphor.

NO. 133

CORRELATES OF CLOZAPINE USE AFTER A FIRST EPISODE OF SCHIZOPHRENIA COMPARED TO PATIENTS NOT PRESCRIBED CLOZAPINE: A LONG-TERM PROSPECTIVE STUDY

Lead Author: Alp Ucok, M.D.
Co-Author(s): Ugur Ã‡Ä±krÄ±kÃ§Ä±lÄ±, Ceylan Ergül, íznur Tabak, Ada Salaj, Sercan Karabulut, Christoph U. Correll

SUMMARY:

Objective: Identify variables predicting clozapine use after a first episode of schizophrenia (FES). **Methods:** Patients with FES and 15 or fewer days of lifetime antipsychotic treatment were followed during naturalistic treatment, and those initiated on clozapine were compared to those receiving non-clozapine antipsychotics for 24 months or more regarding demographic and clinical baseline characteristics and adherence and relapse patterns during follow-up. Treatment-resistant schizophrenia (TRS) was defined as two or more antipsychotic trials of adequate dose for six or more weeks. **Results:** Altogether, 105 patients with FES (mean age=22.6, 55.7% male, follow-up=72.1±50.2 months) were included. Clozapine was initiated after 2.5±1.1 adequate antipsychotic trials and 10.9±9.3 months after meeting TRS criteria. In eight of the 28

clozapine-treated patients (28.6%) initiating clozapine during the first 12 months of follow-up (mean=7.1±3.3 [range=3–12] months), premorbid childhood adjustment was significantly worse than in those starting clozapine later (mean=78.5±43.0 [range=17–168] months). Compared to non-clozapine users (n=77), patients started subsequently on clozapine (n=28) had significantly more relapses in the first six months of follow-up prior to clozapine use (40.0% vs. 13.2%, p=0.005) but were significantly less likely to have a first relapse despite treatment adherence (38.1% vs. 73.3%, p=0.01). In multivariable analyses, antipsychotic polypharmacy (p=0.013) and having a first relapse despite being adherent to antipsychotic treatment (p=0.048) independently predicted later clozapine use in logistic regression analysis. **Conclusion:** Clozapine use after a first episode of schizophrenia was predicted by a first relapse while being adherent to non-clozapine antipsychotics, especially if the first relapse occurred within the first six months. Developmental childhood difficulties predicted significantly earlier clozapine use.

NO. 134

A LOOK AT IMPLEMENTATION OF TEAMSTEPPS ON AN ACUTE INPATIENT PSYCHIATRIC UNIT

Lead Author: Hiren Umrania, M.D.
Co-Author(s): Joseph Squitieri, D.O., Susan Hovden, R.N., Logan Hegg, Psy.D., Peter Homel, Ph.D., Scot McAfee, M.D., Theresa Jacob, Ph.D., M.P.H.

SUMMARY:

Background: Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) developed by the Agency for Health Care Research and Quality (AHRQ), has been used in health care for many years. Although data support that TeamSTEPPS helps improve teamwork, communication and overall patient safety, there is a lack of literature about its use in acute care psychiatry. This setting is unique in the importance of teamwork, patient safety and communication due to the ambulatory capacity of patients on the floor, the nature of illnesses in patients and the inter-disciplinary nature of care. We hypothesized that there would be a positive perception in the domains of mutual support, leadership and communication following the implementation of TeamSTEPPS among the staff of an inpatient psychiatric unit. **Methods:** TeamSTEPPS training began in December 2013 as part of a broader plan for the entire hospital, an urban academic medical center. In January 2014, TeamSTEPPS was implemented in a 31-bed adult inpatient psychiatric unit. Approximately one year after implementation (April 2015), all staff on the unit were invited to participate in this IRB-approved prospective study. A follow-up study to assess change or stability in the results of the previous study was conducted again in November 2015. Staff members were requested to anonymously complete a 20-item modification of the AHRQ Culture of Patient Safety Survey based on the domains of mutual support, leadership and communication. Responses to the survey questions were expected to be significantly different from “neutral." Power analysis indicated a minimum sample size of 15 was required to assess the effect. Data from the surveys were analyzed by t-tests using a standard statistical software package. **Results:** One year after implementation of TeamSTEPPS time-point, 17 staff members completed the survey. In the areas of mutual support, leadership and communication, the respective mean scores were 3.57, 3.77 and 3.72, all significantly higher than 3 (neutral). For follow-up assessments two years after implementation, 20 staff members completed the same survey. The mean scores for the domains of mutual support, leadership and communication stayed significantly higher than 3 (3.74, 3.73, 3.96), comparable to the first-year post-implementation scores in these areas. **Conclusion:** The implementation of TeamSTEPPS training for staff on an inpatient psychiatric unit provided positive results that remained stable over the long term in this acute care setting. Overall, the unit staff endorsed positive feelings about the unit following TeamSTEPPS training. Our data indicate that the unit functions significantly well with regard to leadership, mutual support and communication. The decrease in communication problems may translate to a decrease in medical errors, leading to increased patient safety, better team morale and communication, and promotion of better clinical outcomes.

NO. 135

FACTORS ASSOCIATED WITH ASSAULTIVE BEHAVIOR OF MEN AND WOMEN WITH PSYCHOSIS: THE IMPORTANCE OF VICTIMIZATION

Lead Author: Jan Vevera, M.D., Ph.D.
Co-Author(s): ÄŒernÃ½ M., Hodgins S., KuÄíková R., KáÅ¾mér L., Lambertová A., Nawka A., Nawková L., Parzelka A., Raboch J., Kmoch S.

SUMMARY:

Background: Knowledge of factors associated with assaults by persons with psychosis is needed to prevent such behavior. Risk factors may vary across countries. **Methods:** Assaultive behavior, substance misuse, victimization, and childhood physical and sexual abuse of 158 patients with psychosis and 158 healthy adults recruited in the same city in the Czech Republic were compared. Participants completed interviews and questionnaires to confirm diagnoses, report on aggressive behavior and current and past victimization, and analyze substance use. Additional information was collected from collateral informants and clinical files. **Results:** Psychosis was associated with an increased risk of assaults among men (OR=3.76, 95% CI [1.89, 7.48], p<0.001) and women (OR=3.89, 95% CI [1.64, 9.22], p=0.002). In models including males with and without psychosis, an increased risk of assault was associated with psychosis, childhood physical abuse, harmful alcohol use and a recent physical victimization. A decreased risk was associated with increasing age and employment. Among women with and without psychosis, only recent victimization was associated with an increased risk of assault, and increasing age was protective. Serious assaults were associated with the presence of positive symptoms. **Conclusion:** Risk of violence was higher among patients with psychosis. Psychotic disorder and victimization predicted assaults, while substance misuse played only a minor role, suggesting that risk factors for violence may vary across countries. Commonly used risk prediction instruments may underestimate the risk of violent behavior, as they take little account of current victimization. Programs aimed at developing skills to resolve interpersonal conflicts may reduce victimization. This work was supported by PRVOUK-P26/LF1/4 and SVV UK 260148/2015.

NO. 136

"WE DON'T TALK ABOUT THAT STUFF": A TOOLKIT FOR INTEGRATING SEXUAL AND REPRODUCTIVE HEALTH SERVICES INTO OUTPATIENT PSYCHIATRIC PRACTICE

Lead Author: Martha C. Ward, M.D.
Co-Author(s): Jesse Zatloff, Zoe Philip, Darby Ford, Silke von Esenwein, Ph.D.

SUMMARY:

Background: Sexual and reproductive health (SRH) services, including STI testing, pap smears and contraception, are critical areas of women's health and well-being. Women with severe mental illnesses (SMI) are more likely to experience adverse sexual and reproductive outcomes, but are less likely to receive preventive screenings than women without SMI. In addition, the conventional wisdom among mental health care professionals has been that people diagnosed with SMI are not sexually active, and research has shown a general discomfort about discussing SRH with their patients. As a result, psychiatrists rarely discuss SRH with their clients, instead focusing on medication and symptom management. Since outpatient mental health providers are often the only point of access to health care for women with SMI, they are missing an important opportunity to provide the most basic and urgent medical needs to this vulnerable population. Thus, there is an urgent need to educate and train mental health providers on the SRH needs of their female patients. **Methods:** A retrospective chart review of adult women of reproductive age with SMI at a large, inner-city, safety net hospital was performed to examine if women receive adequate preventive services. The records were examined over time frames based on the CDC recommendations for STIs and other preventive screenings. Additionally, a short survey was created and administered to psychiatrists working at the Behavioral Outpatient Center to determine provider comfort and practices in addressing the SRH of their female patients. **Results:** The electronic medical records showed only a small proportion of patients received the recommended level of preventive SRH services, including well woman exams, pap smears and STI tests. Psychiatrists reported that there is not enough time to address SRH concerns and that other topics take precedence during appointments. Instead, most psychiatrists reported only discussing SRH when prompted directly by patients during appointments. The Prescribe, Refer, Educate model was developed to help psychiatrists address the SRH needs of women with SMI. This interactive training and toolkit intervention addresses psychiatrists' concerns and improves their knowledge of SRH topics. The training is geared toward integrating SRH topics into psychiatrists' workflow and focuses on safe sex practices, STI tests and contraception, as they pertain to women with SMI. **Conclusion:** This intervention improves patient outcomes and increases access to care by simplifying psychiatrists' workflow and responses to SRH issues. The next step will be to incorporate feedback about the intervention that will be gathered through one-on-one interviews. Then, a formal outcome evaluation of the training toolkit will be conducted to measure

the knowledge and comfort levels of mental health providers who participated in the training.

NO. 137

EFFECTS OF ADJUNCTIVE BREXPIPRAZOLE ON THE CORE SYMPTOMS OF DEPRESSION: A POST HOC, POOLED ANALYSIS OF TWO PIVOTAL PLACEBO-CONTROLLED STUDIES

Lead Author: Emmanuelle Weiller
Co-Author(s): Peter Zhang, Aleksandar Skuban, Catherine Weiss

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/2C receptors. Brexpiprazole was approved in July 2015 by the FDA for use as an adjunctive therapy to antidepressants (ADTs) for the treatment of major depressive disorder (MDD). The objective of this post hoc analysis of two phase 3 trials was to assess the efficacy of adjunctive brexpiprazole on core symptoms of depression using the Montgomery-Åsberg Depression Rating Scale-6 (MADRS6) subscale (sum of scores on items 1–apparent sadness, 2–reported sadness, 3–inner tension, 7–lassitude, 8–inability to feel and 9–pessimistic thoughts). **Methods:** Patients with MDD and an inadequate response to one to three ADTs were enrolled and received single-blind ADT for eight weeks. Patients with inadequate response after this prospective phase were randomized to ADT+brexpiprazole or ADT+placebo for six weeks. Both studies included fixed doses (2mg [study 1: NCT01360645]; 1mg and 3mg [study 2: NCT01360632]). Mean change in MADRS6 subscale score from baseline to week 6 were analyzed using a Mixed Model Repeated Measure (MMRM) approach with pooled placebo groups. Change from baseline to week 1 and week 2 were analyzed with all brexpiprazole groups pooled, as all patients were on the same dose during a two-week titration period (week 1: 0.5mg; week 2: 1mg). **Results:** At week 6, beneficial effects were observed in the MADRS6 subscale (least square mean difference to placebo+ADT [n=381]: 1mg+ADT [n=211]=−1.73, p=0.0003; 2mg+ADT [n=175]=−1.90, p=0.0002; 3mg+ADT [n=213]=−1.78, p=0.0002). Significant differences were observed as early as week 1 (least square mean difference=−0.74, p=0.0010) and week 2 (least square mean difference=−1.21, p=0.0001). **Conclusion:** In these post hoc analyses, adjunctive brexpiprazole resulted in significant improvements in the core symptoms of depression.

NO. 138

BREXPIPRAZOLE AND LONG-TERM FUNCTIONING IN ADULTS WITH SCHIZOPHRENIA: RESULTS FROM A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED MAINTENANCE STUDY

Lead Author: Catherine Weiss
Co-Author(s): Mary Hobart, John Ouyang, Andy Forbes, Emmanuelle Weiller, W. Wolfgang Fleischhacker

SUMMARY:

Background: Brexpiprazole is a partial agonist at 5-HT1A and dopamine D2 receptors at similar potency and an antagonist at 5-HT2A and noradrenaline alpha1B/2C receptors. Brexpiprazole was approved in July 2015 by the FDA for treatment of schizophrenia and as adjunctive treatment of major depressive disorder. We evaluated the effects of brexpiprazole on long-term social functioning based on data from a maintenance trial [NCT01668797]. **Methods:** Patients experiencing an acute exacerbation of schizophrenia were cross-titrated from current antipsychotic treatment(s) to brexpiprazole over a period of one to four weeks, if required, before entering a 12–36-week single-blind stabilization phase on brexpiprazole (1–4mg). Patients with stable symptoms over a period of 12 consecutive weeks and on a stable dose of brexpiprazole for at least the last four weeks of the stability period were then randomized to the stabilization dose of either brexpiprazole or placebo for up to 52 weeks (maintenance phase). The primary endpoint was time from randomization to exacerbation of psychotic symptoms/impending relapse. Social functioning was measured using the clinician-rated Global Assessment of Functioning (GAF) and Personal and Social Performance (PSP) scales. The GAF was used to assess psychological, social and occupational functioning on a hypothetical continuum of mental health-illness (range: 1–100). The PSP measures personal and social functioning in four domains: socially useful activities, personal and social relationships, self-care, and disturbing and aggressive behaviors (range: 1–100). **Results:** A total of 202 patients were randomized to either brexpiprazole (n=97) or placebo (n=105). The primary endpoint analysis showed a statistically significant effect of brexpiprazole compared to placebo (log-rank test: hazard ratio=0.292, p<0.0001). Mean GAF scores at

randomization were 63.1 and 64.3 in the placebo and brexpiprazole groups, respectively. Least squares (LS) mean change from baseline to week 52 was −6.0 for placebo and 0.6 for brexpiprazole, treatment difference favoring brexpiprazole versus placebo (6.6, 95% CI [3.3, 9.8], p=0.0001) (LOCF, ANCOVA). Mean PSP total scores at randomization were 48.7 and 50.1 in the placebo and brexpiprazole groups, respectively. LS mean change from baseline to week 52 increased in both groups (placebo: 10.3; brexpiprazole: 15.1), treatment difference favoring brexpiprazole versus placebo (4.8, 95% CI [1.3, 8.2], p=0.0071) (LOCF, ANCOVA). **Conclusion:** Brexpiprazole significantly improved long-term social functioning on the PSP scale and maintained good overall function on the GAF scale.

NO. 139

INCREASED DEMAND FOR PSYCHIATRIC SERVICES IN A COLLEGIATE SETTING

Lead Author: Burdette Wendt
Co-Author(s): Suhayl Nasr, M.D., Vicente Gonzaga, M.D.

SUMMARY:

Objective: There is increased awareness of the mental health issues seen on campuses across the country. This is the first longitudinal study in one private college examining the frequency of utilization of psychiatric services. **Methods:** Data were systematically collected over a 10-year period of psychiatric office visits in the same college by the same single provider. Data collected included types and frequencies of medications used, number of visits, and percentage of the total student body seeking medication assistance. **Results:** Data from 10,813 office visits were collected. The size of the student body increased over the 10-year period. There was also a 75% increase in the number of students seeking treatment in a given year, from 2.0% in 2005 to 3.5% of the student body in 2014. There was less frequent use of psychiatric services than reported nationally. The average number of visits per student in a year rose from 3.3 to 4.4. The number of medications prescribed remained consistent throughout the study, averaging between 1.4 and 1.6 medications per student. The frequency of different types of medications used also remained consistent throughout the period. Bupropion and sertraline were the most commonly used antidepressants, amphetamine salts the most frequently prescribed stimulant, buspirone the most frequently prescribed anxiolytic, and aripiprazole the most frequently used antipsychotic. More details of yearly data will be presented. **Conclusion:** The number of students seeking psychiatric help has increased over the past 10 years, along with the severity of the presenting problems and the number of medications used. There was little change in the type of medications used.

NO. 140

BRAIN ACTIVATION ASSOCIATED WITH WORKING MEMORY MAINTENANCE AND DISTRACTION

Lead Author: Jong-Chul Yang, M.D., Ph.D.
Co-Author(s): Jong-Il Park

SUMMARY:

Objective: Despite recent studies in identifying the neural circuitry contributing to cognitive control, the differential neural mechanisms for working memory (WM) and cognitive inhibition components of cognitive control have not yet been completely specified. The purpose of this study was to assess the brain activation associated with WM maintenance operations by presenting task-irrelevant distracters during recognition of the human face and its location in a quadrature space by using fMRI. **Methods:** Twelve healthy, right-handed subjects (mean age 21.1±2.0; six males) underwent 3.0T fMRI with an event-related paradigm. The paradigm consisted of “encoding–WM maintenance–retrieval–fixation baseline." In the encoding task, three different faces sequentially appear once. The WM task consisted of 48 trials for maintenance task of face and its location, respectively. The subjects performed a WM task for faces with novel faces (high-level distraction; half of the trials) and scrambled faces (low-level distraction; half of the trials) presented during the delay interval, looking at the distracters. In the retrieval task, either of the previously used faces or a new face appeared in the face recognition task. Moreover, in the location recognition task, a face appeared in the same or different location on a quartile coordinate. The subjects were asked to make a recognition decision for the retrieval of the face and its location by pressing one of two response keys. Data were analyzed by SPM 2. **Results:** The scores for the behavioral accuracy for high and low distraction in the face recognition task were 64.9±12.5% and 74.3±13.2%, respectively, and the scores for the location recognition task were 66.3±11.2% and 75.3±11.4%, respectively. There were significant differences in the brain activation. In the frontal and parietal cortices, the activation areas observed

predominantly in high distraction over low distraction in face maintenance included the ventrolateral prefrontal cortex (PFC) and superior/inferior parietal gyri. On the other hand, the activation areas observed predominantly in high distraction of location maintenance included the ventrolateral PFC, dorsolateral PFC and superior/inferior parietal gyri (P<0.01). **Conclusion:** These results demonstrate the differential neural mechanism associated with WM maintenance by presenting task-irrelevant distracters to the face recognition and its location. This finding will be useful to assess the central network related to impairment of cognitive control observed in psychiatric disorders with WM dysfunction.

NO. 141

EFFICACY OF CARIPRAZINE IN BIPOLAR DEPRESSION: POST HOC BAND-PASS ANALYSES OF TWO RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIALS

Lead Author: Lakshmi Yatham, M.B.B.S.
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SUMMARY:

Background: Cariprazine (CAR), a dopamine D3/D2 receptor partial agonist, is approved for the treatment of schizophrenia and manic or mixed episodes associated with bipolar I disorder; it is currently in development as monotherapy in bipolar depression and adjunctive treatment in major depressive disorder. CAR has demonstrated efficacy versus placebo (PBO) in one of two phase II studies in patients with bipolar depression (NCT01396447, NCT00852202); in the small negative study, high PBO response may have contributed to the outcome. This post hoc analysis explored the efficacy of CAR versus PBO after excluding study centers with unusually high PBO responses in these studies. **Methods:** Post hoc band-pass filter analyses excluding study centers with PBO response (50% or higher improvement in Montgomery-Åsberg Depression Rating Scale [MADRS] score) rates over 50% were applied to the eight-week, multicenter, randomized, PBO-controlled studies of patients with bipolar depression. The a priori primary efficacy parameter was mean change in MADRS total score at week 6 (RGH-MD-56) or week 8 (RGH-MD-52). In RGH-MD-52, patients were randomized to PBO (n=79) or CAR 0.25–0.75 (n=76) or 1.5–3mg/day (n=78); in RGH-MD-56, patients were randomized to PBO (n=148) or CAR 0.75 (n=143), 1.5 (n=147) or 3mg/day (n=146). **Results:** In RGH-MD-52, the least squares mean difference (LSMD) for CAR versus PBO in change in MADRS total score from baseline to week 8 (primary efficacy endpoint) was not statistically significant (0.25–0.75mg/day: −0.7 [p=0.7408]; 1.5–3mg/day: 0.0 [p=0.9961]). At week 6, LSMDs were −0.2 (p=0.9191) and −1.8 (p=0.3250) for 0.25–0.75 and 1.5–3 mg/day, respectively. After excluding sites with PBO response rates over 50%, 60% of study centers remained in the analysis at both week 6 (n=159) and week 8 (n=152). LSMDs were statistically significant for CAR 0.25–0.75mg/day (−5.2; p=0.0317) at week 8 and for both doses at week 6 (0.25–0.75mg/day: −5.0 [p=0.0315]; 1.5–3mg/day: −5.2 [p=0.0287]). In RGH-MD-56, significant improvement versus PBO in MADRS total score change at week 6 (primary efficacy endpoint) was observed for CAR 1.5mg/day (LSMD=−4.0 [p=0.0010; p=0.0030 with multiplicity adjustment]); LSMDs for 0.75 and 3.0mg/day were −1.9 (p=0.1292) and −2.5 (p=0.0374), respectively. At week 8, LSMDs were −2.0 (p=0.1274), −3.8 (p=0.0029) and −3.1 (p=0.0170) in 0.75, 1.5 and 3mg/day, respectively. Using the 50% band-pass filter (n=481 at week 6; n=424 at week 8), LSMDs for all CAR doses versus PBO were statistically significant at weeks 6 and 8 (LSMD range=−4.1 to −5.5, all p<0.01). **Conclusion:** CAR was effective in the treatment of bipolar I depression in RGH-MD-56. High PBO response may explain the negative outcome in RGH-MD-52, as CAR treatment effects were significant versus PBO after filtering sites with excessive PBO response rates. This research was supported by funding from Forest Laboratories, LLC, an Allergan affiliate, and Gedeon Richter, Plc.

NO. 142

MILD COGNITIVE DISORDER AND DEPRESSION: TREATMENT WITH AND ASSOCIATION BETWEEN DONEPEZIL AND ESCITALOPRAM

Lead Author: Julio C. Zarra, M.D., Dr.P.H.
Co-Author(s): L. Schmidt, M. B. Grecco

SUMMARY:

Objective: Evaluate the efficacy of donepezil (acetylcholinesterase inhibitor) and escitalopram (SSRI) association in patients with mild cognitive disorder and depression. There is a possible relation between the deficit in executive and cognitive cerebral function and depression or a relation between the serotonin and cholinergic systems in relation to cognitive-depression disease comorbidity.

Methods: A group of 1,026 patients with symptoms of mild cognitive disorder and depression (*DSM-5* criteria) were separated into three groups of 342 patients. Each group received different treatment in an 18-month period. Group 1 received donepezil 10mg/day. Group 2 received escitalopram 10mg/day. Group 3 received both drugs, same dose. **Results:** The therapeutic response evaluated in the Hamilton Scale for Depression (HAM-D), Montgomery-Åsberg Depression Rating Scale (MADRS), Mini Mental State Examination (MMSE), Global Clinical Impression (GCI), ADAS-GOG, Trail Making Test, FAQ, Raven Test and GO-NO-GO Test measured scores over 18 months. Group 3 had a much better response than the others and a "brain enhancer." **Discussion:** Could be cerebral cholinergic systems deficit a generator of Depressive Disorder? **Conclusion:** The group who received the association of centrally acting reversible acetylcholinesterase inhibitor donepezil with antidepressant (SSRI) escitalopram had a relevant satisfactory therapeutic response—the best result. There is a possible relation between the deficit in cholinergic systems and depression.

NO. 143

DO DIRECT SURVIVORS OF TERRORISM REMAINING IN THE DISASTER COMMUNITY SHOW MORE RESILIENCE THAN SURVIVORS WHO RELOCATE?

Lead Author: Phebe M. Tucker, M.D.
Co-Author(s): Pascal Nitiéma, M.D., M.P.H., M.S., Tracy L. Wendling, Dr.P.H., Sheryll Brown, M.P.H.

SUMMARY:
Background: Research has identified factors associated with psychiatric symptoms, post-traumatic growth and general health among survivors of terrorism and other trauma; these include gender, age, social support, socioeconomic status, intensity of exposure, time passed since trauma and others. Almost 19 years after a disaster, we explored a factor not examined in studies of terrorism—possible differences between terrorism survivors remaining in the community and those relocating to other communities; we examined symptoms, post-traumatic growth and physical health to determine if remaining in the disaster community was associated with better outcome. **Methods:** 138 directly exposed survivors of Oklahoma City's (OKC) 1995 terrorist bombing, 80%of whom were injured, were assessed by telephone survey for symptoms of anxiety and depression (Hopkins Symptom Checklist), PTSD (Breslau PTSD Screen) and post-traumatic growth (Post-traumatic Growth Inventory). We compared 114 (82.6%) remaining within the OKC community with 24 (17.4%) who relocated to other communities. Statistical methods included Pearson chi-square, Fisher's exact and Wilcoxon's rank sum tests; Fligner-Policello test; and multivariable logistic regression. **Results:** Groups did not differ in age, ethnicity and annual income, but survivors remaining in OKC were predominantly female (57.0%), and most who relocated (70.8%) were male. Anxiety, depression and post-traumatic stress symptoms were higher and post-traumatic growth was lower in survivors remaining in OKC compared to those who relocated, although differences were not statistically significant. Considering major medical problems, there were no significant differences between survivor groups in reporting hypertension, stroke, COPD, cancer, diabetes and arthritis. More relocated survivors reported coronary heart disease than survivors still in OKC, but differences were not significant after adjusting for gender with multivariable logistic regression; male gender is a risk factor for heart disease, and the higher proportion of males in the relocated survivor group may explain differences. Groups did not differ significantly in cigarette smoking or alcohol use, although those leaving OKC reported drinking alcohol more frequently. **Conclusion:** Contrary to expectations, remaining within the Oklahoma City community was not associated with better mental health or medical outcome or more post-traumatic growth than relocating when direct survivors of terrorism were assessed many years after the event. Various factors may explain this, including gender, employment opportunities, baseline health and mental health, relocation near family and friends, and fewer reminders of the terrorist event in distant communities; these issues should be explored in future studies.

NO. 144

MINIMAL CLINICALLY IMPORTANT DIFFERENCE AND TREATMENT RESPONSE DETERMINATION FOR UCSD PERFORMANCE-BASED SKILLS ASSESSMENT IN MAJOR DEPRESSIVE DISORDER

Poster Presenter:Elizabeth Merikle, Ph.D.
Lead Author: Philip D. Harvey, Ph.D.
Co-Author(s): Wei Zhong, Ph.D., George Nomikos, M.D., Ph.D., Christina Kurre Olsen, Ph.D., Michael Cronquist Christensen, Dr.P.H., M.P.A., M.Sc., Elizabeth Merikle, Ph.D.

SUMMARY:

Objective: The UCSD Performance-Based Skills Assessment (UPSA) has been extensively utilized in patients with schizophrenia and bipolar disorder to measure functional capacity. This post hoc analysis of NCT01564862 reports the psychometric properties of the UPSA in outpatients with major depressive disorder (MDD) subjectively reporting cognitive dysfunction. **Methods:** Patients with recurrent MDD (18–65 years, Montgomery-Åsberg Depression Rating Scale [MADRS]≥26) and self-reported cognitive dysfunction were enrolled in an eight-week, multicenter, randomized, double-blind, placebo-controlled study. Clinical outcomes included cognitive performance (DANTES Subject Standardized Test [DSST]), subjective cognitive functioning (Physician Data Query [PDQ]), workplace productivity (Work Limitations Questionnaire [WLQ]), mood (MADRS) and functional capacity (UPSA). Construct validity was examined via baseline correlation analyses of the UPSA composite score ("UPSA," possible range: 0–100) and clinical outcomes. Anchor-based (CGI-I≤2) and distribution-based (one-half SD) analysis methods were used to establish a responder definition and minimal clinically important difference (MCID) threshold. Correlations were interpreted as Pearson's r statistics. **Results:** A total of 602 MDD patients were included in this analysis. The mean UPSA score at baseline was 77.8 (SD=12.88). Significant baseline correlations ($p<0.05$) were observed between the UPSA and duration of current major depressive episode (MDE, r=0.10), age (r=−0.13), education (r=0.29), DSST (r=0.36) and WLQ (r=−0.17), but not number of previous MDEs (r=−0.06), MADRS (r=0.02) or PDQ (r=−0.02). MADRS only correlated ($p<0.05$) with duration of current MDE (r=0.13) and PDQ (r=0.32). The anchor-based approach resulted in an estimate of Δ+6.7 for the MCID on the UPSA, which was supported by the distribution-based approach (one-half SD=+6.44). **Conclusion:** UPSA score correlated with cognitive performance and workplace productivity, but not mood or subjective cognitive functioning, supporting the construct validity of the UPSA for functional capacity in MDD independent of mood symptoms. Both the distribution-based and anchor-based approaches suggest defining the MCID of treatment response on the UPSA composite score as a change of approximately +6 to +7 points.

NO. 145

IMPACT OF VORTIOXETINE ON FUNCTIONAL CAPACITY IN MDD PATIENTS WITH COGNITIVE DYSFUNCTION: A UCSD PERFORMANCE-BASED SKILLS ASSESSMENT POST-HOC ANALYSIS

Lead Author: William Jacobson, Ph.D.

Co-Author(s): Philip D. Harvey, Ph.D., Wei Zhong, Ph.D., George Nomikos, M.D., Ph.D., Christina Kurre Olsen, Ph.D., Michael Cronquist Christensen, Dr.P.H., M.P.A., M.Sc., Elizabeth Merikle, Ph.D.

SUMMARY:

Objective: The primary objective of NCT01564862 was to evaluate the efficacy on cognitive functioning of flexible-dose vortioxetine (10–20mg) in patients with major depressive disorder (MDD) subjectively reporting cognitive dysfunction. This post hoc analysis evaluates the effects of vortioxetine on functional capacity in these patients. **Methods:** MDD patients (aged 18–65, Montgomery-Åsberg Depression Rating Scale [MADRS]≥26) with self-reported cognitive symptoms were enrolled in an eight-week, double-blind, placebo (PBO)-controlled study. Duloxetine 60mg was included as an active reference for treatment-related changes in the MADRS for study validation. The UCSD Performance-Based Skills Assessment (UPSA) composite score (comprising the full UPSA and UPSA-B in English- and non-English-speaking patients, respectively; possible range: 0–100) was used as an additional endpoint to evaluate the change in functional capacity from baseline to week eight versus PBO. Exploratory analyses were performed, stratified by baseline functional impairment severity (UPSA≤75, ≤70) and according to prespecified cutoffs for the change from baseline in UPSA (≥5, ≥7, ≥10). An exploratory analysis of composite efficacy at week eight (defined as remission from both depressive symptoms [MADRS≤10] and functional impairment [UPSA≥75]) was also conducted. **Results:** A total of 602 patients were randomized to treatment (vortioxetine, n=198; PBO, n=194; duloxetine, n=210). Vortioxetine demonstrated a statistically significant increase in functional capacity versus PBO in all patients (vortioxetine, n=175, Δ+8.0; PBO, n=166, Δ+5.1; $p<0.001$), with a significant improvement in patients with baseline UPSA≤75 (n=62, Δ+14.9; n=73, Δ+9.9; $p=0.003$), as well as UPSA≤70 (n=41, Δ+16.7; n=46, Δ+10.8; $p=0.010$). Duloxetine did not demonstrate a significant improvement in functional capacity compared to PBO in all patients ($p=0.637$) or stratified by baseline UPSA scores. A significantly higher percentage of vortioxetine patients classified as responders versus PBO based on a change in

UPSA of 7 or more (n=85, 48.6%; n=59, 35.5%; p=0.015) and 10 or more (n=66, 37.7%; n=46, 27.7%; p=0.049). Duloxetine was not significantly different versus PBO in response rates for any cutoff. Vortioxetine and duloxetine both significantly improved depressive symptoms (MADRS) versus PBO (p<0.05 and <0.001, respectively) at week eight, validating the study. For the composite efficacy analysis (MADRS and UPSA), only vortioxetine was significantly different versus PBO (22.3% vs. 10.2%; p=0.005) at week eight. **Conclusion:** In addition to benefits in cognitive dysfunction and depressive symptoms, vortioxetine significantly improved functional capacity, as assessed by the UPSA. These results emphasize the distinct profile of vortioxetine in MDD patients with cognitive dysfunction, with clinical utility observed in a wide population of patients.

NO. 146

PRODUCT FEATURES AND SUPPORT FOR OPTIMIZING ENGAGEMENT WITH DIGITAL HEALTH TOOLS FOR PATIENTS WITH SERIOUS MENTAL ILLNESS: AN EXPERT CONSENSUS SURVEY

Poster Presenter:John Docherty, M.D.
Lead Author: Ainslie Hatch, Ph.D.
Co-Author(s): Julia E. Hoffman, Ruth Ross, John Docherty

SUMMARY:

Background: Digital health tools (DHTs) for patients with serious mental illness (SMI), including schizophrenia, bipolar disorder and major depressive disorder, need to be designed and developed with consideration of how to optimally engage, train and support individuals using DHTs, given their unique needs and challenges. **Objective:** Assess expert opinion of product features that support patient initial/sustained engagement in using DHTs and the required training and support for patients, their health care professionals (HCPs) and caregivers to achieve this aim. **Methods:** The survey followed the expert consensus methodology developed to quantify and report expert opinion to inform areas where literature is scant and/or for areas not yet well covered by definitive research. A panel of experts (n=39) who met criteria for participation by having contributed to literature about development and evaluation of DHTs for psychiatric disorders completed a two-part survey containing 19 multi-part questions and rated predefined responses on a 9-point Likert scale. A chi-square test of score distributions across three ranges of values (1–3, 4–6, 7–9) was used to determine the presence of consensus. Confidence intervals of the mean ratings were used to designate first-, second- or third-line categorical ratings, with a lower limit boundary of 6.5 for first-line ratings. We describe results from five questions about product features that were likely to promote initial and sustained engagement with a DHT and the support needed to optimize its use. In responding, the experts were asked to consider the tool(s) and technology with which they had the most experience. **Results:** The experts strongly agreed that ease of use was the most valuable feature for promoting initial engagement with a DHT (mean rating 8.7, SD=0.5). For sustained engagement, the experts strongly endorsed both ease of use and ease of incorporating DHT into the fabric of the patient's life. To optimize the use of DHTs by HCPs, most experts considered it extremely important to provide HCPs with a clear rationale about how the device can improve outcomes. The experts also agreed that HCPs would need training and resources and would be most likely to participate in a tutorial provided within the DHT or in individualized training. Although there was a high rate of consensus on the need for HCPs to provide initial training to patients, 56% of the experts indicated that they believed providing such training would be somewhat difficult for HCPs. Training was also rated as important for caregivers to effectively participate in the use of DHTs. **Conclusion:** The experts identified product features that would support initial and sustained engagement with DHTs for patients with SMI. They also identified the need for providing training and resources to patients, HCPs and caregivers to optimize engagement and to facilitate the use of DHTs in clinical practice.

NO. 147

A MULTICENTER, EIGHT-WEEK STUDY TO ASSESS USABILITY OF A DIGITAL HEALTH FEEDBACK SYSTEM IN ADULTS WITH SCHIZOPHRENIA TREATED WITH ORAL ARIPIPRAZOLE

Poster Presenter:John Docherty, M.D.
Lead Author: Timothy Peters-Strickland, M.D.
Co-Author(s): Linda Pestreich, Ainslie Hatch, Ross Baker, Lada Markovtsova, Praveen Raja, Peter Weiden, David Walling

SUMMARY:

Background: Detection of nonadherence to oral antipsychotics is notoriously difficult and prone to error. A digital health feedback system (DHFS) offers a new opportunity to objectively measure and report

a patient's medication ingestion. The DHFS consists of a medication-embedded ingestible sensor, wearable sensor, and mobile- and cloud-based software applications that enable the secure collection and sharing of objective medication adherence information with health care professionals (HCP). **Objective:** Evaluate the usability of a DHFS in adults with schizophrenia stabilized on oral aripiprazole by assessing their ability to independently replace, pair and use a wearable sensor in an eight-week period while taking prescribed doses of oral aripiprazole tablets with embedded ingestible sensors. **Methods:** This study (NCT02219009) consisted of two cohorts in a phase 2a open-label study testing the DHFS. Six U.S. sites enrolled outpatients with schizophrenia taking oral aripiprazole monotherapy for maintenance treatment. The study consisted of three phases: an initial screening phase, a training phase of three weekly site visits to ensure subjects learn how to operate the system and a five-week independent phase. Patients and HCP independently rated the usability of the DHFS. **Results:** Sixty-seven outpatients were enrolled, and 49 (73.1%) completed the study. The mean age was 46.6 (SD=9.7) years, and a majority of the enrolled outpatients were male (74.6%) with a median Clinical Global Impressions–Severity Scale (CGI-S) score of mildly ill (73.3%). Overall, based on HCP rating, 32 of 66 (48.5%) subjects were able to pair and apply a patch independently or with minimal assistance at baseline. With respect to subject performance across time, the percent of subjects requiring only minimal assistance improved to 82.7% (43 of 52) by week 8. Based on subject report, 81.1% were somewhat satisfied, satisfied or extremely satisfied with the DHFS at week 8. **Conclusion:** These results show that a high proportion of both HCPs and subjects diagnosed with schizophrenia were able to use a new DHFS with relative ease. The data support the potential utility of the DHFS in clinical practice. This research was supported by Otsuka Pharmaceutical Development and Commercialization, Inc.